INTRODUCTION

> Each age has a predilection for a mode of proof. The Christian Middle Ages had a preference for the ordeal and the oath. The *Ancien Régime* developed the document and the confession involving torture. Our age has a predilection for expert evidence. Certainly the confession, testimony, the document or the oath continue to be used, but the means of proof which attracts attention, responds to our expectations, and arouses discussion is expert evidence.[1]

The ability of the courts to assess expert evidence is a cause for concern prevalent in western legal systems today. It seems to cut across the traditional divide between Anglo-American and continental European legal systems. The principal form in which that concern is manifest is discussion of expert bias.[2] Bias is of course something that is not unique to experts; it is quite likely that witnesses will be biased, and it is always possible that a judge will be biased. Different legal systems handle these concerns in different ways: some jurisdictions may exclude the testimony of civil parties, criminal defendants or those in certain relationships to them, others may let the question of witness bias go to weight; judicial bias may be dealt with by recusal, or addressed on appeal. The possibility of bias in the testimony of experts is problematic for the courts in a different way from bias in the testimony of witnesses of fact, and it cannot be addressed, as it can for judges, on appeal, and only rarely through recusal. The leading approach in the United States of America for the last fifteen years has been

[1] E. Jeuland, 'Expertise', in L. Cadiet (ed.), *Dictionnaire de la justice* (Paris: Presses Universitaires de France, 2004), pp. 503–10, pp. 503–4, referencing C. Champaud, 'Société contemporaine et métamorphose de l'expertise judiciaire', in *Mélanges Henry Blaise* (Paris: Economica, 1995), pp. 59–79.

[2] The nature of expert bias is analysed in Chapter 3, in the context of expert disagreement more widely. At this point, it is worth noting that the concept of expert bias is not coterminous with the partisanship that we may encounter with the use of party-appointed experts. Experts, including court experts, may also be biased for a range of reasons arising from predisposition and interest.

to exclude expert evidence that does not pass the *Daubert* test for reliability,[3] so that the jury is not required to evaluate it. But *Daubert* does not escape the problem of assessment; it merely transfers it from being a jury assessment of weight to being a judicial assessment of admissibility. The problems of assessment were succinctly expressed by the American jurist Learned Hand at the start of the last century, discussing the difficulties the courts encounter when two experts disagree with one another in a case: '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 the expert is necessary at all.'[4]

The difficulties faced by the courts in assessing expert evidence are not new. They were recognized, for example, in the summing up of Hatsell B in the 1699 murder trial of *Cowper*, one of the earliest reported English cases in which extensive use was made of expert evidence: 'The doctors and surgeons have talked a great deal to this purpose [on evidence for drowning] . . . but unless you have more skill in anatomy than I, you would not be much edified by it. I acknowledge I never studied anatomy; but I perceive that the doctors do differ in their notions about these things.'[5] The problems of assessment have received increasing attention in recent years, particularly since the early 1980s. Although the assessment of expert evidence itself is fundamentally a question of legal epistemology, the reason why the issue has become highlighted is sociological. Increasing concerns about the use of experts in the legal process mirror to a large extent concerns about the use of experts in political and administrative decision making, and reflect the role of the expert in society generally.[6] This 'rise of the expert' is a symptom of an increasing functional specialization in society that has been apparent since at least the eighteenth century.[7] Society has come increasingly to rely on experts not only to be the most appropriate people to do certain tasks but also to be the most appropriate people to provide us with certain information. This is one

[3] *Daubert* v. *Merrell Dow Pharmaceuticals* 509 US 579; 113 Sup Ct 2786 (1993).
[4] L. Hand, 'Historical and Practical Considerations Regarding Expert Testimony' (1901) 15 *Harvard Law Review* 40–58, 54.
[5] *R.* v. *Cowper* (1699) 13 St Tr 1106, at 1189.
[6] M.-C. Meininger (ed.), 'L'administrateur et l'expert' (2002) 103 *Revue Française d'Administration Publique*, 365–527; G. Edmond (ed.), *Expertise in Regulation and Law* (Aldershot: Ashgate, 2004).
[7] E.g. R. Porter, *England in the Eighteenth Century*, 2nd edn (Harmondsworth: Penguin, 1990), p. 81. See also N. Luhmann, *Differentiation of Society*, trans. S. Holmes and C. Larmore (New York: Columbia University Press, 1982).

of the reasons why, by the 1990s, many felt the courts to be deluged by expert evidence, with an inordinate number of experts,[8] providing expert opinions of at times questionable value to the courts.[9]

As we increasingly rely on the authority of experts to inform (or even to determine) our practical reasoning in relation to legal fact finding, so the long-standing concerns about the ability of the courts to assess expert evidence come to the fore, and we are forced to address two fundamental questions about the judicial assessment of expert evidence. First, how can a non-specialist court accurately determine facts that require specialist knowledge? As a subsidiary question, if a specialist advises the non-specialist court, how can that court know whether to accept the advice? Secondly, how should we arrange our legal processes best to support our expectations of accurate fact determination, and other procedural goals, arising in whole or in part from expert evidence? The first question is one that affects similarly the use of specialists as advisers by government. The second is one that extends in principle to all areas of judicial fact determination. These fundamental questions are ultimately questions of applied philosophy, rather than of sociology or legal doctrine.

There are two integrating themes that help to define the approach taken in this book to the judicial assessment of expert evidence. The first is the re-integration of legal evidence theory with epistemology. The second is the re-integration of the study of evidence with that of procedure. Legal epistemology, as a branch of applied philosophy, must be concerned as much with the procedural mechanisms by which evidence comes before the court as with the specific evidential rules of admissibility.[10] If we are to

[8] E.g. Lord Woolf, *Access to Justice: Final Report* (London: Her Majesty's Stationery Office, 1996), ch. 13.

[9] E.g. P. Huber, *Galileo's Revenge: Junk Science in the Courtroom* (New York: Basic Books, 1991). In a survey conducted at the turn of the millennium, United States judges said that one of the most frequent problems that they encountered with experts was with them abandoning objectivity and becoming advocates for their side: S. Dobbin, S. Gatowski, J. Richardson, G. Ginsburg, M. Merlino and V. Dahir, 'Applying Daubert: How Well Do Judges Understand Science and Scientific Method?' (2002) 85 *Judicature* 244–7. An empirical survey in Australia in 1997 indicated that the main judicial concern about expert evidence was expert bias: I. Freckleton, P. Reddy and H. Selby, *Australian Judicial Perspectives on Expert Evidence: An Empirical Study* (Melbourne: Australian Institute of Judicial Administration, 1999). The next three concerns were, in decreasing order, failure to prove the basis of expert opinion, failure by advocates to pose questions adequately, and ineffective cross-examination.

[10] On the narrow focus of admissibility rules within the broader context of the evidential process, see D. Dwyer, 'What Does it Mean to be Free? The Concept of Free Proof in the Western European Legal Tradition' (2005) 3 *International Commentary on Evidence* iss. 1,

evaluate how best the courts might assess expert evidence, then we must consider the whole procedural framework within which expert evidence comes before the court. We must also understand better the values and expectations that are embedded into evidential and procedural practices, which sit alongside the straightforward goal of accurate fact determination. Stein has recently suggested that accurate fact determination is in some way prior to the moral values in evidence and procedure: 'Morality picks up what the epistemology leaves off. This motto summarizes the principal thesis of this entire book.'[11] Rather than accept that morality is in some way residual in understanding how the courts approach the assessment of expert evidence, I would suggest that morality sits firmly alongside questions of classical epistemology, particularly in that it shapes the procedural mechanisms through which the expert evidence is developed and presented.[12]

This book seeks to contribute to the development of a general theory of the judicial assessment of expert evidence, and in turn to a general theory of the judicial assessment of all forms of evidence, that might be applicable in any legal system, to any area of law. It does this by developing a special theory that relates to expert evidence in the civil courts in a number of Anglo-American and continental European jurisdictions. In the Anglo-American world, I consider civil expert evidence in England and Wales, as well as in the federal courts of the United States of America, and some aspects of expert practice in Australia. In continental Europe, I consider civil expertise in France, Germany and Italy. The principal focus is on the judicial assessment of expert evidence in English civil procedure, from the earliest recorded cases, at the end of the fifteenth century, to the present day, examining in particular the effect of the Woolf Reforms on the assessment of expert evidence in England, since the Civil Procedure Rules ('CPR') came into force in April 1999.[13] These reforms followed the publication of Lord Woolf's *Access to Justice* report in 1996.[14] Although a number of books have now been published on expert evidence under the Civil Procedure Rules,[15] this is the first theoretical account of how the

art. 6, www.bepress.com/ice/vol3/iss1/art6 (last accessed 1 August 2008). See also W. Twining, 'Some Scepticism About Some Scepticisms', in *Rethinking Evidence: Exploratory Essays*, 2nd edn (Cambridge: Cambridge University Press, 2006), pp. 99–164, pp. 114–16 (first published 1984).

[11] A. Stein, *Foundations of Evidence Law* (Oxford: Oxford University Press, 2005), p. 12.

[12] See also H. Ho, *A Philosophy of Evidence Law: Justice in the Search for Truth* (Oxford: Oxford University Press, 2008).

[13] Civil Procedure Rules 1998 (SI 1998/3132). [14] Woolf, *Access to Justice*.

[15] E.g. J. Day and L. Le Gat, *Expert Evidence under the CPR: A Compendium of Cases from April 1999 to April 2001* (London: Sweet and Maxwell, 2001); S. Burn, *Successful Use of*

assessment of expert evidence may be affected by the choice of expert role under those rules.

Chapter 1 ('General epistemological issues') provides a necessary theoretical framework, by laying out general epistemological issues relating to the judicial assessment of evidence, within the context of the Rationalist Tradition of evidence scholarship.[16] The chapter begins by defining what we mean by epistemology in its classical sense, relating to how individuals form justified beliefs. In particular, foundationalist and coherentist approaches to epistemological justification are rejected in favour of the foundherentist approach proposed by Haack.[17] This requires that a justified factual determination of a case must be both internally coherent and inferred soundly from evidence (Section 1.2). The concept of 'legal epistemology' is then introduced, and its defining characteristics identified. Within legal epistemology, a wide range of institutional variations are encountered, that arise in particular from fundamental differences between criminal procedure, and from the composition of the court. Issues of composition (Section 1.3) include particularly whether the court is unicameral, considering both questions of law and fact, or bicameral, with separate tribunals of law and fact (usually judge and jury). The chapter then considers how we might evaluate our criteria for determining whether a factual belief is justified. In particular, the possible role of atomistic inferential reasoning and generalizations in such determination is examined (Section 1.4). One of the defining features of sound evidential inference is the combination of facts with generalizations, to produce networks of inferences. In the final section (Section 1.5), some arguments for naturalized epistemology are introduced, and it is proposed that a 'modest naturalism' be adopted, allowing us to benefit from the insights of cognitive psychology into the mechanisms of cognition, without exhausting the requirements of the components of a developed epistemology.

Within this general epistemological framework, Chapter 2 ('Expert evidence as a special case for judicial assessment') examines whether there is anything special about expert evidence that might warrant concerns that the courts have greater difficulty assessing this evidence than other forms of evidence. Three distinguishing features are identified: first,

Expert Witnesses in Civil Disputes (Crayford: Shaw and Sons, 2005); L. Blom-Cooper (ed.), *Experts in the Civil Courts* (Oxford: Oxford University Press, 2006). See also T. Hodgkinson and M. James, *Expert Evidence: Law and Practice* (London: Sweet and Maxwell, 2007).

[16] W. Twining, 'The Rationalist Tradition of Evidence Scholarship', in *Rethinking Evidence*, pp. 35–98.

[17] S. Haack, *Evidence and Inquiry: Towards Reconstruction in Epistemology* (Oxford: Blackwell, 1993).

expert evidence is usually considered to represent statements of opinion rather than fact, and opinions present particular evidential difficulties (Section 2.2); secondly, expert evidence is the product of specialist knowledge unavailable to the courts while non-expert evidence is not similarly distinguished (Section 2.3); thirdly, expert evidence is frequently presented by witnesses who represent persistent communities of practice outside the legal domain (Section 2.4). It is proposed that the court's epistemic competence to assess expert evidence can be justified, at least to a limited extent, on two grounds: first, the fundamental structure of evidential reasoning is substance blind; secondly, expert fact finding is the product of the same common investigative methods as everyday fact finding. Arguments for strong epistemological constructivism, in particular autopoietic systems theory, which have found some favour in legal theories about expert evidence, are examined and refuted in light of this claim for limited epistemic competence (Section 2.5).

Chapters 1 and 2 together provide an argument for the courts possessing limited epistemic competence to assess the validity of expert evidence in general. Chapter 3 ('Making sense of expert disagreement') takes this argument further, to examine in greater detail the specific problem of how the courts are to reach a decision in cases where the expert evidence offers more than one interpretation. It is within this broader framework of expert disagreement that we can situate the phenomenon of expert bias. This chapter is in five parts: first, a discussion of why the legal and expert communities differ in their attitudes towards disagreement (Section 3.2); secondly, a detailed analysis of why experts might disagree, at the level of selecting sets of generalizations (Section 3.3); thirdly, the application of those generalizations to base facts (Section 3.4); fourthly, a consideration of how different types of question addressed in expert evidence lend themselves to different types and degrees of disagreement (Section 3.5); fifthly, a taxonomy of the causes and manifestations of expert bias (Section 3.6). The most valuable free-standing contribution of this chapter to our understanding of expert evidence is perhaps its clarification of how disagreement between experts is to be expected, and of the unreasonableness of lawyers in expecting a 'single right answer' from experts in most if not all cases.

In juxtaposition to the epistemological argument presented in Chapters 1 to 3, Chapter 4 ('Non-epistemological factors in determining the role of the expert') identifies non-epistemological factors that may contribute to determining the role of the expert within a given jurisdiction. This is the analysis of the role of values in procedure and evidence referred to above.

Although Chapters 1 to 3 were illustrated with occasional examples from England, France and the United States of America, they remained essentially jurisdiction-neutral. Chapter 4, in contrast, is jurisdiction-specific. This is because it is only by understanding the specific jurisdictional context within which procedural and evidential rules operate that one can understand properly the role of non-epistemological factors in shaping the functioning of those rules. The chapter therefore introduces the use of expert evidence in five jurisdictions in the western legal tradition: England, the United States federal courts, France, Germany and Italy (Section 4.2). Five non-epistemological factors are then introduced and discussed in relation to these jurisdictions: the social function of civil litigation; the role of facts; the appropriate conduct of litigation; the status of experts in society; the historical use of experts within a jurisdiction (Section 4.3). Chapter 4 is a pivotal point in the book. Up to here, in Chapters 1 to 3, we have considered how the court might assess the expert evidence presented to it. That the focus is civil rather than criminal evidence is largely irrelevant, and jurisdictions provide illustrations rather than determining the substance of the analysis. In Chapters 5 to 7, however, the details of the rules around expert evidence within a jurisdiction become crucial to understanding how that evidence is developed and presented to the court. While Chapters 1 to 3 establish the necessary preliminary point that the courts can assess expert evidence (albeit to a limited extent), Chapters 5 to 7 consider how best to produce and present the evidence.

Chapter 5 ('Assessing expert evidence in the English civil courts: the sixteenth to twentieth centuries') begins the work of examining in detail how epistemological and non-epistemological factors combine to produce a range of expert roles, looking at the case study of English civil procedure. The chapter identifies the historical development of provisions to assist the assessment of expert evidence in the English civil courts from their first mention at the end of the fifteenth century through to the last days of the Rules of the Supreme Court in 1999. In particular, it analyses the historical development of the party expert (Section 5.3), special juries (Section 5.4), the assessor (Section 5.5), and the court expert (Section 5.6), in the context of attempts to address emerging epistemological and non-epistemological issues with expert evidence. The epistemological issues include questions about whether lay fact finders can assess expert evidence, and how to resolve expert disagreement. The non-epistemological issues include broader legal and social developments that may have given rise to the evolving forms that these expert roles have taken. The chapter concludes by considering the rise and fall of the Ultimate Issue Rule in

the nineteenth and twentieth centuries, in England and the United States (Section 5.7). This rule can be understood as an attempt to avoid the possibility of de facto delegation of fact finding to an expert, arising from the court's perceived inability to assess the evidence fully, by restricting the nature of the opinion that the expert might provide.

Following on through with the historical momentum built up by Chapter 5, Chapter 6 ('Assessing expert evidence in the English civil courts today') provides the first detailed analysis of the relationship between procedure and the assessment of expert evidence under the CPR. It analyses the selection of experts, varying effects on the ability of the parties to produce full pleadings, opportunities presented to challenge expert opinion, narrowing and possibly resolving differences, and the delegation of decision making, in relation to party experts (Section 6.2), single joint experts (Section 6.3), and assessors (Section 6.4). The purpose of this analysis is to understand how these procedural elements affect the ability of the court to determine accurately the facts of a case, depending on the choice made between the use of party experts, single joint experts and assessors. This analysis allows us to make more nuanced decisions about which expert roles might best be suited to the range of types of expert question identified at the end of Chapter 3.

Finally, Chapter 7 ('The effective management of bias') steps back from the detailed examination of contemporary English civil procedure to consider how best the courts should use procedural techniques to accommodate the epistemological issues presented by the perceived problem of expert bias. This analysis draws on examples from England, the United States and France. In particular, the chapter explores the effectiveness of four measures intended to remove bias: the use of single experts (Section 7.2); the availability, for example in France, of presumptive recusal of an expert for bias (Section 7.3); the gatekeeper function exercised by many United States courts to exclude 'junk science', following the Supreme Court judgment in *Daubert* (Section 7.4); the use of exhortations to experts to observe an overriding duty to the court, as found for example in England in Part 35 of the CPR (Section 7.5). Chapter 7 also considers whether the removal of litigation privilege from the work of experts might reduce expert bias (Section 7.6), and the effectiveness of sanctions (criminal, civil and professional) against experts whose evidence has been found to have been unacceptably biased (Section 7.7).

1

General epistemological issues

1.1 Introduction

> Everyone is bound to cooperate with the judicial authorities with a view to procuring the manifestation of truth.[1]

> These rules shall be construed to secure fairness in administration, elimination of unjustifiable expense and delay, and promotion of growth and development of the law of evidence to the end that the truth may be ascertained and proceedings justly determined.[2]

This book is concerned with how judges seek to the best of their ability to form justified beliefs about the truth where at least some of the evidence on which they must rely is the evidence of experts. It can thus be seen as occupying a space within applied philosophy, in the area of epistemology, as well as within the law relating to evidence and proof. Specifically, it concerns legal rather than classical epistemology. Classical epistemology is concerned with how individuals form knowledge and justified beliefs (Section 1.2). However, in relation to the judicial assessment of expert evidence, this would require that we imagine the judge sitting in splendid isolation, imagining and obtaining whatever information she decides is necessary to decide accurately the facts that lie behind a case. Instead, the judge undertakes her fact-finding work within the context of the legal process, and in particular in the context of the rules and practices of evidence and procedure. Legal epistemology entails fact finding, and belief justification, in a social context.

Legal epistemology tells us how the courts are capable of producing justified true (or, minimally, truth-indicative) beliefs (Section 1.3). These beliefs are produced within the paradigm of the Rationalist Tradition of

[1] France, Code civil 1804, art. 10 (as amended by Law no. 72-626 of 5 July 1972).
[2] United States, Federal Rules of Evidence (1975), r. 102.

evidence scholarship (Section 1.4).[3] Within the Rationalist Tradition, the particular interests of the New Evidence Scholarship with logic, inferences and probability theory form a part of this legal epistemology, but by no means constitute its entirety.[4] The brief preliminary groundwork in applied philosophy undertaken in this chapter is necessary for the development, in Chapter 2, of a special theory for how accurate fact finding by a 'lay' (non-expert) tribunal can incorporate the evidence of experts on a rational basis.[5]

It may be tempting to some readers, particularly perhaps to lawyers, to skip this chapter to get onto 'the stuff about expert evidence' from Chapter 2 onwards, or even to skip that chapter as well, to get onto 'the *legal* stuff about expert evidence'.[6] This would, however, be to ignore one of the two key integrating themes of this book's approach to understanding the judicial assessment of expert evidence, first encountered in this book's Introduction. As well as being concerned with the re-integration of evidence with procedure in developing a legal epistemology, this book is also fundamentally concerned with re-integrating legal evidence theory with classical epistemology. As Laudan has commented, in his recent work on legal epistemology in relation to criminal law, 'The nagging worry was that key parts of *all* these [epistemic] notions (especially proof, relevance, and reliability) were being used in ways that were not only non-standard (or at least among philosophers) but also, apparently, deeply confused.'[7]

[3] W. Twining, 'The Rationalist Tradition of Evidence Scholarship,' in *Rethinking Evidence: Exploratory Essays*, 2nd edn (Cambridge: Cambridge University Press, 2006), pp. 35–98.

[4] 'The New Evidence Scholarship' is the label commonly given to a loosely constituted body of evidence scholarship that attempts to re-integrate legal evidence into a multidisciplinary examination of factual inference and proof, e. g. R. Lempert, 'The New Evidence Scholarship: Analyzing the Process of Proof' (1986) 66 *Boston University Law Review* 439–77; J. Jackson, 'Analysing the New Evidence Scholarship: Towards a New Conception of the Law of Evidence' (1996) 16 *Oxford Journal of Legal Studies* 309–28. Since the early 1980s, the New Evidence Scholarship has widened its interests beyond probabilities and proof to encompass a broader cross–disciplinary revival of interest in evidence and proof in legal contexts.

[5] The term 'lay' can mean either 'non-expert' or 'non-lawyer', depending on context. Because of the potential ambiguity, the term is avoided in this book.

[6] On how an evidence theorist might respond to a question such as 'What has this got to do with the Evidence course I teach?' see P. Roberts, 'Rethinking the Law of Evidence: A Twenty-First Century Agenda for Teaching and Research', in P. Roberts and M. Redmayne, *Innovations in Evidence and Proof: Integrating Theory, Research and Teaching* (Oxford: Hart, 2007), pp. 19–63, p. 31.

[7] L. Laudan, *Truth, Error and Criminal Law – An Essay in Legal Epistemology* (Cambridge: Cambridge University Press, 2006), p. xi (original emphasis).