

## EXPERT TESTIMONY, LAW AND EPISTEMIC AUTHORITY

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**ABSTRACT** *This article discusses the concept of epistemic authority in the context of English law relating to expert testimony. It distinguishes between two conceptions of epistemic authority (and epistemic deference), one strong and one weak, and argues that only the weak conception is appropriate in a legal context, or in any other setting where reliance on experts can be publicly justified. It critically examines Linda Zagzebski's defence of a stronger conception of epistemic authority and questions whether epistemic authority is as closely analogous to practical authority as she maintains. Zagzebski elucidates a kind of deference that courts generally, and rightly, try to avoid. Her concept of 'first person reasons', however, does capture an important aspect of the deliberations of conscientious legal actors.*

### Introduction

This article considers what light the concept of epistemic (or theoretical) authority can shed on the law regarding expert testimony – and conversely, what light legal approaches to expert evidence can shed on more general problems about expert testimony and epistemic authority. I shall distinguish between two conceptions of epistemic authority (and epistemic deference), one strong and one weak. Only the weak conception, I shall argue, is appropriate in a legal context, and much of the law in this area can be understood as an attempt to prevent experts being accorded an unwarranted degree of authority.

In accordance with legal usage, I take an 'expert' to be someone who is recognised as having a special competence to draw inferences from evidence within a certain domain.<sup>1</sup> That competence typically derives from access to a large body of evidence and from socialization into specialised ways of perceiving and reasoning about evidence of that kind.<sup>2</sup> Experts are treated as authorities when their drawing certain inferences is treated as a reason for others to draw the same inferences, rather than basing their inferences on an independent examination of the underlying evidence. In this respect, the authority of experts has a similar structure to that of practical authority as analysed by Raz: the expert's opinion sums up and takes the place of the

evidence on which it is based.<sup>3</sup> Raz himself has discussed this analogy several times as a way of shedding light on the nature of practical authority,<sup>4</sup> but the use of the analogy to explain the nature of epistemic authority has been most thoroughly explored by Linda Zagzebski.<sup>5</sup> Although Zagzebski says nothing about the role of experts in legal proceedings and focusses chiefly on authority in religious and moral matters, her account of epistemic authority provides an interesting foil when developing an account of the role of expert witnesses. To accord experts the kind of authority defended by Zagzebski would, I shall argue, be inappropriate in legal proceedings or in any other setting where the authority of experts has to be publicly justified. These public contexts can be contrasted with the personal religious and moral reflection which is Zagzebski's central concern. The kind of 'deliberative, or first-person reasons',<sup>6</sup> based on sentiments of trust rather than on evidence, on which Zagzebski bases her argument for epistemic authority, may nevertheless have to part to play in determining whether a legal decision-maker is satisfied to the requisite standard of proof.

## Two Conceptions of Epistemic Authority

When I treat an expert (X) as an authority, I treat the expert's inferences based upon a certain body of evidence (*e*) as reasons for belief which replace any inference that I might otherwise have drawn from *e*. There are two ways in which X's asserting *p* on the basis of *e* might function as a reason in my deliberations. I might treat it as a piece of evidence that counts in favour of *p* to a degree which depends on the strength of my evidence that anything X infers from *e* is likely to be true. In this case I accord X *weak* epistemic authority (or accord weak deference to X's authority). Or I might regard X's inferences as *replacing* my own deliberations, and simply believe *p* to the same degree that X professes to believe it. In that case I accord X *strong* authority

It is possible to treat expert evidence in a way that combines elements of strong and weak authority. Forensic scientists, in particular, often express their conclusion as lending a certain degree of support to some hypothesis. For example, a footwear expert may say that she has considered the likelihood that a mark found at the crime scene would have certain features if it was made (a) by the defendant's shoe and (b) by some other shoe, and her findings lend 'strong support' to (a).<sup>7</sup> Such conclusions implicitly invite the jury to treat them as strongly authoritative in relation to the question of which shoe made the mark – to believe that it lends the degree of support to the hypothesis that the expert says it does – while still weighing that evidence against other evidence relevant to the issue in the case (e.g. whether the defendant was present at the scene). I discuss the legal implications of this point below.

Probably the best known general arguments in favour of according a strong form of authority to experts are those of John Hardwig. He portrays rational deference to epistemic authority as consisting ‘in passively and uncritically accepting what we are given to believe’.<sup>8</sup> If we have reason to believe that A has good reason to believe *p* (because A has made inquiries which are likely to have furnished A with reliable evidence), we have reason to believe *p* but we do not, Hardwig claims, ourselves have *evidence* that *p*. There is one sense of the word ‘evidence’ in which it is true that A’s belief does not constitute evidence that *p*. As Fricker remarks, if I am asked what is the evidence that smoking causes lung cancer, it does not seem satisfactory to reply that many experts say so.<sup>9</sup> On the other hand, if I am asked what is *my* evidence that smoking causes cancer, it seems acceptable to say that I have evidence in the form of second- or third-hand testimony that epidemiologists who have conducted extensive research on the question are generally agreed that the evidence that it does so is overwhelming.

If we accept evidentialism, i.e. that our beliefs should be apportioned to our evidence, it would seem that our degree of belief should reflect the strength of *our* evidence in the latter sense. To apportion our degree of deference to our evidence requires an active and critical examination of the reasons that putative authorities can give to persuade us to believe them – reasons such as those analysed by Goldman in his response to Hardwig,<sup>10</sup> including the experts’ track record, agreement from other experts, and their ability to respond to contrary arguments. Hardwig’s acceptance of the ‘passive and uncritical’ position of strong deference appears to rest on two reasons.

The first reason is the inescapability of epistemic dependence. Although I can check on the expertise of particular experts, Hardwig points out that I generally have to rely on other experts to do so.<sup>11</sup> At some point, then, I simply have to believe what the experts tell me. Reliance on experts to evaluate other experts is certainly a major epistemic problem, not least in legal contexts; but far from being a reason for ‘blind trust’ in experts, it seems to be a reason for scepticism about them, and for scepticism about one’s own ability to judge the likely truth of their assertions. Particularly in the fields of forensic science and psychology, experts may certify one another’s expertise and display an apparent consensus despite the fact that key assumptions of their disciplines have never been subjected to rigorous inquiry.<sup>12</sup> It may be very difficult for laypeople or courts to find this out. That is a good reason to *distrust* forensic science and psychology, or at least not to trust them ‘blindly’ as, unfortunately, courts sometimes do. In other words it is an argument for adopting only a weak conception of epistemic authority.

Hardwig's second argument is that without relations of epistemic dependence based on trust, the division of epistemic labour required by complex forms of knowledge could not function. He gives examples from mathematics and physics of inquiries that are so complex that no one individual knows all the reasons for believing the conclusion.<sup>13</sup> If even experts have to trust one another in order to know anything, it might appear that *a fortiori* laypeople have to trust experts in order to know anything about a range of subjects.

Hardwig's examples show the extent to which scientific and even mathematical knowledge depend upon testimony, and those testimony-based beliefs cannot always be grounded in non-testimonial evidence.<sup>14</sup> However, the fact that the reasons for believing expert or non-expert testimony often depend upon a network of other testimony-based beliefs does not prevent our subjecting any particular piece of testimony to careful critical scrutiny of its coherence with our other beliefs, testimonial or otherwise.<sup>15</sup> Coherence of pieces of testimony with one another and with the background beliefs of judges and jurors is the normal way in which forensic proof is accomplished.

### **Zagzebski on Epistemic Authority**

A third argument in favour of a strong form of epistemic authority – or so it appears – is Zagzebski's adaptation of Raz's analysis of practical authority. On closer examination, however, Zagzebski's analysis, which is focussed on very different kinds of testimony from that heard in a courtroom, supports the view that strong deference to authority is inappropriate in situations where the beliefs adopted from the expert have to be publicly justified.<sup>16</sup> Transposed to a legal context, Zagzebski's argument can be seen as a plausible reconstruction of the inappropriate reasons which might lead judges or jurors to accord greater deference to authority than is proper.

Zagzebski's argument depends on her view that beliefs can rationally be based not only on theoretical or 'third-person' reasons, that is, on evidence that can be publicly shared, but also on 'deliberative' or 'first-person' reasons. These are reasons that are personal to me as a would-be knower, and they include my reasons to trust my own senses and powers of reasoning, to trust others who appear to have the same faculties and to be as conscientious as I am, and to trust my intuitions and emotions, including admiration for those I take to be wiser than I am. On this basis, Zagzebski argues that I may arrive at a 'conscientious judgment' that I am most likely to acquire true beliefs and avoid false beliefs in certain matters by believing what some other person believes, rather than trying 'to figure out what to believe myself.'<sup>17</sup> Such a person is, for me, an epistemic authority.

Zagzebski's theory of epistemic authority is closely modelled on Raz's account of practical authority. An epistemic authority is someone whose beliefs in a certain domain I trust to such a degree that 'the conscientious thing to do is to let the other person stand in for me in my attempt to judge the truth in that domain and to adopt his belief.'<sup>18</sup> Just like Razian practical authority, Zagzebski argues, epistemic authority is both content-independent and preemptive. It is content-independent in the sense that, if it is a good reason to believe  $p$  that the authority believes  $p$ , it would equally be a good reason to believe  $q$  that the authority believes  $q$ .<sup>19</sup> And it is preemptive in the sense that 'The fact that the authority has a belief  $p$  is a reason for me to believe  $p$  that replaces my other reasons relevant to believing  $p$  and is not simply added to them.'<sup>20</sup>

Zagzebski's idea that the epistemic authority 'stands in for' the epistemic subject and the authority's beliefs take the place of the subject's other reasons for belief captures rather well the kind of deference to experts that judges generally deplore (although they are not altogether consistent in this respect). It is axiomatic, at least in Anglo-American law, that judges and juries are responsible for reaching verdicts on the basis of their own understanding of the evidence presented to them. This task is not to be delegated to experts.<sup>21</sup> Implicitly, the law is committed to an internalist epistemology: decisions about what the courts are to take to be true must not only be reliable (or at least avoid one type of error, wrongful conviction) but must be justified from the perspective of those who make them.<sup>22</sup>

In this respect the law's implicit epistemology resembles what Zagzebski calls 'standard epistemic egoism': the view that a justified belief is one that is ultimately based on reasons that the believer 'has acquired by the direct use of his own faculties,' including the testimony of others where he has good reasons, based ultimately on his own perception, memory and reason, to believe those others to be reliable.<sup>23</sup> Whether or not 'standard egoism' is a sound view in epistemology generally, it reflects the responsibility of judges and juries to base their verdicts solely on their own understanding of the evidence before them. Zagzebski argues that standard epistemic egoists should adopt a modified version of her adaptation of Raz's normal justification thesis, which she calls 'Justification Thesis 1 for the Authority of Belief (JAB 1)'. In its modified version for 'egoists' (or as I would prefer to say, evidentialists), JAB 1 reads as follows:

The authority of another person's belief is justified by my evidence that I am more likely to form a true belief and avoid a false belief if I believe what the authority believes rather than try to figure out what to believe myself.<sup>24</sup>

Let us call this JAB 1\*.

Given the strong sense in which Zagzebski uses the word ‘authority’, I submit that JAB 1\* is plainly false. If another person’s belief has authority for me in Zagzebski’s sense, I am justified in simply adopting that belief as my own. But the type of evidence mentioned in JAB 1\* can justify no more than the following claim: if the other person believes  $p$  and, were I to form an unaided judgment, I would believe  $q$ ,  $p$  is more likely to be true than  $q$ . The mere fact that  $p$  is more likely to be true than my uneducated guess  $q$  cannot be a sufficient reason to believe  $p$ . The other’s person’s belief is *evidence* for  $p$ , but it may fall far short of being sufficient evidence to justify my believing  $p$ .

JAB1\* comes close to one of the most dangerous judicial fallacies about expert evidence: the one committed by the trial judge, and seemingly condoned by the Court of Appeal, in *R v Dallagher*<sup>25</sup> – a case which is a prime example of the courts’ lack of consistency in rejecting strong claims to epistemic authority. A witness who professed to be an expert in the novel ‘science’ of ‘ear-printing’ told the jury that he was ‘absolutely convinced’ that certain deposits on a murder victim’s window were an impression made by the defendant’s ear. The judge told the jury that ‘If you are sure that [the expert’s] evidence is correct and you accept it then you would be entitled to convict on his evidence alone,’ though they accepted another forensic scientist’s slightly more cautious conclusion. Although the Court of Appeal ordered a retrial (at which the charges were dropped after it was found that DNA in the deposit on the window was not Dallagher’s) it approved the terms in which the evidence had been given and made no criticism of the judge’s summing up.<sup>26</sup> In the (then) primitive state of ear-printing ‘science’ it is impossible to discern any evidential basis on which the jury could have been sure that the expert’s confidence was justified. A jury that accepted JAB1\*, however, would seemingly be entitled just to adopt the expert’s belief as its own – though it might be possible to escape this conclusion by arguing that a purported scientist who expresses an ‘absolute conviction’ without his methods being properly tested is not a conscientious epistemic subject and this disqualifies him as an authority.

Zagzebski never considers the possibility that a rational response to some piece of putatively authoritative testimony might be to believe it only to a certain degree, or to believe it have a certain probability of being true. The fact that ‘belief, unlike action, comes in degrees’<sup>27</sup> marks an important distinction between practical and theoretical authority which Zagzebski ignores when she adopts Raz’s argument that, so long as an authority has a better chance of being right than I do, I shall do the right thing more often if I consistently follow the authority’s directives than if I weigh those directives against my own reasons for acting otherwise.<sup>28</sup> In the case of a theoretical authority, however, the result of such a balancing exercise might be, not that I mistakenly disbelieve  $p$  when the authority asserts  $p$ , but that I correctly judge that the

subjective probability of  $p$  given my evidence (including the fact that the authority asserts  $p$ ) is less than the probability asserted by the authority on the basis of *her* evidence. In a situation such as that of a juror in a criminal trial, where it is unjustifiable to believe  $p$  (and infer from  $p$  that the defendant is guilty) unless  $p$  is overwhelmingly probable, the result may be the correct one, given that the verdict has to be based on the evidence available to the jury, not that available to the expert.

The fact that Zagzebski does not consider this point may be connected to her view that first-person reasons are different in kind from third-personal evidence and that these two kinds of reasons for belief cannot be ‘aggregated’ to reach judgments of probability.<sup>29</sup> In judging that someone is an authority in relation to us, it seems that we must rely partly on third-person reasons, for example, evidence that the putative authority has greater access to relevant evidence than we do, and partly on first-person reasons such as trust in the putative authority and admiration for her epistemic virtues. It is not clear whether Zagzebski takes the non-aggregative character of the two kinds of reasons to entail that we cannot use them in combination as a basis for estimates of probability at all, so that we are confined to a binary judgment either to believe or to withhold belief, or merely that in basing judgements of probability on both kinds of reasons we cannot rely on Bayes’ theorem or any other mathematical formula. The latter view is more plausible, and is consistent with Zagzebski’s repeated references to the authority being ‘more likely’ than the deferring party to be right about some matter. But in that case we are left with no explanation of why authority-based beliefs do not come in degrees.

Zagzebski does consider whether, given that an authority is fallible, we should believe the authority’s pronouncement or withhold belief. She maintains that ‘if the authority is in a better position to get the truth than I, the authority is presumably also in a better position to judge whether she should believe or withhold belief’.<sup>30</sup> That may be so, but on Zagzebski’s account this is a first-person judgment by the authority about what *she* (the authority) should believe. What gives *me* a first-person reason to adopt the authority’s belief, according to Zagzebski, is that the authority’s belief is ‘formed in a way that I would conscientiously believe is deserving of emulation’.<sup>31</sup> For that to be a sufficient reason for me to adopt the authority’s view in every case where she judges that she should believe rather than withhold belief, my conviction that she deserves emulation must be so firm that it gives me a reason for belief as strong as the authority’s own reasons, notwithstanding that those reasons are inaccessible to me. Such reasoning might be plausible if I regard the authority with degree of reverence akin to that of a disciple for a guru. It can have no application to putative epistemic authorities in everyday life, let alone in the courtroom.

I cannot discuss here whether or not Zagzebski's first-person reasons form an adequate basis for the kind of deference to authority that she advocates in moral and religious matters, which are her central concerns.<sup>32</sup> Rather, I want to contrast this model of authority with the type of epistemic authority that is appropriate in legal settings or in assessing expert testimony in general. I suspect that Zagzebski would agree that her model has at best a limited application in these contexts.

Although Zagzebski follows Richard Moran<sup>33</sup> in arguing that we do not normally treat testimony – in the sense of people telling us things – as evidence, but rather believe it because we accept the testifier's assurance, she acknowledges that it is possible to treat testimony as evidence. In particular, it may be preferable to rely on third-person, evidential reasons for belief when communicating with other people, since good third-person reasons are reasons that everyone can accept.<sup>34</sup> Since legal verdicts have to be publicly justified, they must be justified by third-person reasons, even if they are partly motivated by first-person reasons. In an English criminal trial the motivation of the jury's verdict will usually never be known, and may involve jurors 'trusting their instincts', but the verdict must be publicly justified by the judge's summing-up, which presents the reasons which could, if accepted by the jury, justify a conviction or an acquittal.

There is also a general reason why Zagzebski's model does not apply to experts. The most important of the 'first person reasons' we have to trust others, according to her, is that we take them to have the same epistemic characteristics as we trust in ourselves. If a speaker claims to be an expert in relation to me, she claims to have some epistemic characteristic that I do *not* have myself, namely expertise in a particular area. The epistemic characteristic that someone has if they are an expert relative to me is an acquired skill in making judgments in a particular domain, which typically involves more than just knowing a large number of propositions.<sup>35</sup> That somebody has such a skill, and that its deliverances are reliable (unlike those of, for example, an astrologer who is highly skilled in perceiving the nuances of a horoscope) is something that can only be established by evidence. It is true that such evidence – for example that a fingerprint expert has undergone extensive training and in tests has correctly discriminated between prints which do and do not share a common source in 99% of cases – may come in the form of testimony from the expert herself. We may accept that evidence at least partly because we trust the expert's assurance that it is true (although in a legal setting we might also infer trustworthiness from the facts that the witness is on oath, is bound to disclose certain matters by procedural rules, and might face severe costs if any lies or omissions were exposed by the opposing lawyers).<sup>36</sup> In accepting the witness's assurance on these matters of fact, or in



presuming her to be competent and sincere in recalling such matters, we accord her no more deference than we do to ordinary testimony in everyday life. Courts do, in fact, accept expert witnesses' testimony as to their qualifications without routinely demanding any further proof. That still leaves open the question of what we as non-experts can safely infer from such evidence as to the reliability of the witness's expert judgments.

There will be some cases in which we have such strong evidence that a testifier (expert or otherwise) is reliable that we are justified in believing their testimony as fully, or almost as fully, as we would be by Zagzebski's first person reasons. Fricker spells this out in her 'Testimony Deferential Acceptance Principle':

One properly accepts that P on the basis of trust in another's testimony that P – her word that P – just if she speaks sincerely, and she is well enough placed with respect to P that were she to have, or make a judgement to form, a conscious belief regarding whether P, her belief would almost certainly be knowledge; and she is better epistemically placed with respect to P than oneself; and one recognizes these things to be so; and one is not aware of significant contrary testimony regarding P.<sup>37</sup>

This principle is very significantly more stringent than Zagzebski's 'Justification Thesis 1 for the Authority of Testimony', which she interprets Fricker as broadly endorsing,<sup>38</sup> and seems easier to satisfy with respect to ordinary eyewitnesses who were simply in the right place at the right time than it is with respect to experts, because even if some experts are as epistemically well-placed as the principle demands, it is hard for laypeople to recognise whether they are. Fricker does accept that expertise can warrant 'strong deference' in her sense of that phrase, namely that although I have reasons to believe the contrary of what the expert asserts, I should let the expert's judgment overrule my own.<sup>39</sup> But justified deference for Fricker always depends on my possessing adequate evidence concerning the expert's epistemic situation, competence and sincerity. In that sense she is an advocate of the 'weak' form of deference that I argue is appropriate in the courtroom.

How wide the gulf between strong and weak deference to authority can be is strikingly illustrated by the only passage in Zagzebski's book where she assigns a hypothetical degree of probability to the authority's being right (a ratio suggested by an analogy with baseball):

In many epistemic domains we can hope to get a better truth/falsehood ratio than .333, but in other domains that is the best the authority can do and I will do much worse than that on my own. There is also the option of refraining from believing anything in those domains, and sometimes that is the best option, but not always. It depends on which alternative will better satisfy my future conscientious self-reflection: nonbelief or belief on authority.<sup>40</sup>

Since it does not seem psychologically possible, let alone rational, to believe  $p$  while also believing that  $p$  is twice as likely to be false as to be true,<sup>41</sup> a charitable interpretation of what Zagzebski means here is that it may be rational to trust an authority even if, for all one knows, they *may* be wrong two-thirds of the time. Be that as it may, this passage yields an important insight: believing on the basis of authority is an attractive epistemic strategy in situations where we want to believe *something* – and believe it fully, not merely that it has some degree of probability – even at the cost of a high risk of believing something false.<sup>42</sup> Zagzebski indeed suggests that people rightly prefer belief to doubt, because a ‘self that doubts is less harmonious than one that has beliefs’.<sup>43</sup> In a criminal trial, the jury or judge should set that preference aside, and refrain from forming any belief in the defendant’s guilt where there is a significant risk that such a belief would be false (no positive belief in innocence is needed to return a verdict of ‘Not Guilty’). Even in a civil trial, the judge should refrain from believing any proposition that a party is required to prove unless satisfied that the evidence shows it to be more probable than not.

If we accept Zagzebski’s analysis as a plausible attempt to make explicit the ways in which people, as she puts it, resolve dissonances between their beliefs, or between their beliefs and their desires,<sup>44</sup> we can see how a juror, for example, might well come to accord strong authority to an expert opinion. Particularly in cases of serious crime it is, presumably, a painful predicament to have a high degree of belief in a defendant’s guilt without being able to say that one is sure of guilt. If simply adopting an expert’s belief could make the juror sure of guilt (or innocence) it might be tempting to do so, especially if they take something like McMyler’s view that their epistemic responsibility for their belief, and moral responsibility for any resulting action, is shared between epistemic authorities and those who believe them.<sup>45</sup> The point is well expressed in a psychological analysis of Dutch criminal trials (where the factfinders are professional judges rather than jurors):

The terrible dilemma...is obvious. Acquitting an actual child abuser, just because there is little evidence, is not what we want. He or she may do it again and make new victims, but in cases like these, real proof is hard to come by....[When] the trustworthiness of the victim bec[omes] the key issue...a confidently speaking expert would not only resolve the court’s dilemma, but also relieve the court of some of its responsibility. Unfortunately things are not so easy.....<sup>46</sup>

### **Weak Epistemic Authority in the Courts**

Having paid Zagzebski the backhanded compliment that her theory is a useful model of the kind of authority that should *not* be allowed determine the outcome of legal proceedings, I now wish

to contrast it with the kind of epistemic authority which *is* acceptable in the courts, and which does *not* share key characteristics of Razian practical authority.

One of the most explicit statements of the orthodox common-law view of epistemic dependence on experts is found in a case much cited in English as well as Scottish case law, *Davie v. Edinburgh Corporation*.<sup>47</sup> It is worth explaining the facts of the case. Mr Davie was one of several home-owners who claimed that their property had been damaged by blasting carried out in the course of constructing a sewer. The defendants relied on the evidence of an engineer who, applying a formula from a piece of published research, maintained that the property was too far from the blasting to be damaged by it. The judge, however, accepted that the coincidence in timing between the blasting and the appearance of cracks in the allegedly affected buildings proved that the blasting probably was responsible. The defendants appealed, arguing that the judge was not entitled to reject uncontradicted expert evidence. In effect, they maintained that the judge should simply have adopted the expert's opinion and treated it as an exclusionary reason which pre-empted any consideration of other evidence such as the times at which cracks appeared. In emphatically rejecting this argument, Lord Cooper remarked:

Expert witnesses however skilled or eminent, can give no more than evidence. ... Their duty is to furnish the Judge or jury with the necessary scientific criteria for testing the accuracy of their conclusions, so as to enable the Judge or jury to form their own independent judgment by the application of these criteria to the facts proved in evidence. The scientific opinion evidence, if intelligible, convincing and tested, becomes a factor (and often an important factor) for consideration along with the whole other evidence in the case, but the decision is for the Judge or jury. In particular the bare *ipse dixit* of a scientist... will normally carry little weight, for ... the parties have invoked the decision of a judicial tribunal and not an oracular pronouncement by an expert.<sup>48</sup>

One of the striking things about this classic *dictum* is that it fully acknowledges the court's epistemic dependence on the expert. It is the expert himself who must provide the criteria by which his own expertise is to be judged. What this meant in the factual context of the case was that the expert had to provide the judge with the scientific grounds for believing that the formula he applied could be relied upon to determine the possibility of damage from the cumulative effect of repeated blasting on a building constructed as Mr Davie's bungalow was. Apparently only one relevant experiment had been conducted, and the judge thought the building involved was probably more robustly built than Mr Davie's bungalow. From this, in Lord Cooper's view, the trial judge had been fully entitled to conclude that the scientific evidence did not rule out the effect to which the other evidence pointed.<sup>49</sup>

We can clearly see in this case that the expert evidence is *not* treated as pre-emptive. It does not afford an exclusionary reason why the judge should not examine the reasons on which it rests. On the contrary, he must examine them to determine whether they are ‘intelligible’, have withstood testing in court, and are ‘convincing’. Nor does the expert’s authority exclude other reasons known to the judge, such as the temporal proximity of the damage to the blasting. Nevertheless, the expert’s reasoning is at least in some respects authoritative. For example, the judge could not have worked out for himself the formula by which the ‘amplitude’ of earth movement could be calculated from the weight of explosives, readings from a vibrograph, and distance from the site.<sup>50</sup> But the expert’s authority was not a reason for the judge to refrain from working this out for himself. On the contrary, his inability to work it out for himself was what justified his reliance on the expert’s authority.

There is one respect in which it does appear right to treat expert evidence as an exclusionary reason, and that is to avoid double-counting. Double-counting occurs when a fact which is known to the expert and the court both forms part of the expert’s reasons and is treated by the court as an independent reason for coming to the same conclusion. For example in *R v Weighman*,<sup>51</sup> a forensic scientist compared a CCTV image with that of the defendant and said that the similarities gave ‘strong support’ for an identification. The Court of Appeal found that this evidence ‘taken together with the fact that the jury were able to look at these images themselves’ was sufficient to justify conviction.<sup>52</sup> While seeing the images for themselves may have helped the jury to *understand* the scientist’s evidence, it was not an additional factor that could be *added* to the scientist’s evidence based on the same facial features. In a more recent case the Court of Appeal accepted that it could not have made a difference to the strength of the evidence in *Weighman*.<sup>53</sup>

The courts’ reluctance to accord strong authority to experts can be seen in two controversial areas of the law on expert evidence.

The first area is the limited admissibility of expert evidence about a credibility of a witness. Although the exclusion of evidence about the reliability of particular witnesses could be justified by the unreliability of the expert evidence itself, the leading cases on the subject suggest that what mainly troubles the judges is that they want jurors to base their verdicts on their *own* view of the credibility of the witnesses.<sup>54</sup> In other words, they fear that the jury’s reliance on the expert’s authority may pre-empt their own assessment of the witness, resulting in an improper delegation of decision-making power to the expert. As Chief Justice McLachlin put it in the Canadian Supreme Court, ‘Faced with an expert’s impressive credentials and mastery of scientific

jargon, jurors are more likely to abdicate their role as fact-finders and simply attorn to the opinion of the expert in their desire to reach a just result'.<sup>55</sup> McLachlin, however, dissented from the Supreme Court's majority view that for this reason an expert should not be allowed to testify about the reasons why a child might delay reporting sexual abuse. This was evidence that the jury could properly have taken into account without its pre-empting their own judgment as to the credibility of the child complainant. My own view is that McLachlin was right: the jury needed this information to avoid the risk of 'epistemic injustice' to the child who might be disbelieved because of a lack of understanding of sexual abuse.<sup>56</sup> As McLachlin acknowledged, there is a difficult balancing act in such cases between the 'probative value' of the evidence and the 'prejudicial effect' constituted by the risk that the jury may 'attorn' to it and treat it as a strongly authoritative finding that the complainant is truthful.

A second example of the courts' concern to keep experts from asserting a strong form of epistemic authority can be seen in the controversial case of *R v T (Footwear Mark Evidence)*.<sup>57</sup> The case concerned the practice, discussed above, of using a form of words to express the degree of support that a piece of evidence, in this case a shoeprint, gave to the hypothesis that the defendant (or someone wearing his shoes) had been at the scene of the crime. The expert's choice of words reflected his estimate of the likelihood ratio, based on comparing the shoe with data about shoes worn by other criminal suspects. The Court of Appeal was rightly critical of the expert's failure to explain his reasoning to the jury, but to the dismay of many statisticians and forensic scientists they went further and said that such calculations of the likelihood ratio should not be used at all.<sup>58</sup>

The Court's reasoning seems muddled in places, and its suggestion that the expert should have said merely that the shoes 'could have made'<sup>59</sup> the mark at the crime scene is unhelpful. Implicitly, however, the Court seems to have recognised that the method used by the expert was a way of staking a claim to strong authority while also recognising that his was not the only evidence the jury had to consider. In effect, the expert was purporting to make an authoritative judgment about the weight to be attached to his own evidence. What this failed to take into account was the extent to which the estimate of the likelihood ratio depended on the nature of the database used by the expert (in fact, this was considerably more favourable to the defendant than the data which the defence, unaware of the database the expert had used, drew upon to cross-examine him). The Court's concern that the 'verisimilitude of mathematical probability' might lend a jury to accord undue authority to the expert's own view of the strength of the evidence was well founded, however unsatisfactory its remedy may be.<sup>60</sup>

Within common-law scholarship, debate about expert evidence has largely centred on how far to strengthen the ‘gatekeeping’ role of judges so as to exclude evidence deemed insufficiently reliable to be considered by the jury. This is too complex an issue to address in detail here, but it is worth briefly noting the implications of the idea of weak deference for the debate. If we believe that non-expert factfinders can make reasonable assessments of the weight to be accorded to expert evidence we will not want to set the threshold of admissibility so high that excludes evidence to which a reasonable factfinder could assign considerable weight when considering it as part of a larger body of evidence. On the other hand, if we are mindful of the temptation to accord expert testimony a stronger form of deference than is rationally justifiable, we will have reason to shield factfinders from evidence that gratuitously st

The Law Commission of England and Wales, influenced by but, in my view,<sup>61</sup> significantly improving upon the US Supreme Court’s influential judgment in *Daubert v Merrill Dow Pharmaceuticals*, proposed a statutory test that would meet these desiderata rather well. To be admissible, expert evidence would have to be ‘soundly based’ and the ‘strength of the opinion’ would have to be ‘warranted having regard to the ground on which it is based’. The test would allow evidence with only a modest scientific basis to be admitted provided that any conclusions drawn by the expert were expressed in appropriately cautious terms. The Law Commission proposed a set of guidelines for judges to assess whether evidence was ‘soundly based’. Unfortunately the government declined to introduce the proposed legislation. The guidelines for judges have made their way into law through a Practice Direction issued by the Lord Chief Justice, but without the statutory test that they were designed to accompany. I have argued elsewhere that the gap left by the failure to legislate can be filled by developing the embryonic common-law test of whether evidence is ‘sufficiently reliable to be admitted’ in a way that is faithful to the *Davie* principle: evidence is ‘sufficiently reliable’ if it provides the jury with a sufficient basis to decide how far they can rely on it. The question of what degree of weight a jury could rationally accord the evidence needs to be considered not only in relation to the admissibility of the evidence but also in relation to whether the evidence against a defendant, taken as a whole, amounts to a case to answer, and in considering how to advise the jury about the evaluation of the evidence.

### A Place for ‘First Person Reasons’?

I have argued – and I believe Zagzebski would agree – that decisions made in a public forum such as a trial have to be justified by ‘third person’ reasons, that is, by evidence. That is not to say that reaching a verdict in a trial involves *nothing but* the assessment of probabilities based on evidence. Such a simple view would ignore two crucial features of the trial.

First, it has often been pointed out in the literature on evidence that there is a gap between statistical probabilities and verdicts.<sup>62</sup> A criminal jury is not asked whether they find the probability of guilt reaches some quantitative threshold such as .9 or .99, but rather whether they are ‘sure’ of guilt. This requirement to be sure is, as Duff *et al.* argue, linked to a central function of the criminal trial: the public moral censure of those found guilty.<sup>63</sup> Such a public expression of ‘reactive attitudes’, notionally on behalf of the community at large, cannot appropriately be based on anything less than a claim to know the accused is guilty.<sup>64</sup> Even in civil trials, there is controversy over whether ‘nakedly statistical’ evidence of the facts necessary to establish liability is sufficient to prove a case ‘on the balance of probabilities’. I argue elsewhere<sup>65</sup> that a civil verdict is best understood as a decision to *accept* the facts alleged as true or false for certain practical purposes. In situations such as the much discussed hypothetical case where someone is run down by an unidentified bus, and one company operates the majority of buses in town, the statistical probability of an event does not entail that justice would be done by accepting that it has occurred. There is, then, a gap (and not only in legal contexts) between forming a certain degree of belief in a proposition and either *fully* believing it (and being willing to assert it as true, as in a criminal verdict) or accepting it for practical purposes (as in a civil verdict). When judges or jurors have to search their consciences to decide ‘Am I sure?’ or ‘Am I satisfied on the balance of probabilities?’ what Zagzebski calls first-person reasons may have a part to play. For example: ‘I feel sure that the complainant’s evidence was truthful and though I cannot claim to have evidence that I am a reliable judge of truthfulness, I believe I can conscientiously trust my judgment in this respect’.

That something other than a probabilistic assessment of evidence is involved in the trial is confirmed by the importance that common-law trials attach to oral evidence and argument.<sup>66</sup> The face-to-face encounter between witnesses, judges, jurors and advocates seems calculated to elicit affective responses including trust in, and empathy for, particular witnesses. To bring these affective responses under Zagzebski’s category of ‘first person reasons’ may be a more satisfactory explanation of their importance than the orthodox view that the ‘demeanour of the

witness' is a species of 'real evidence'.<sup>67</sup> The weight attached to such factors is limited, in the English criminal trial, by the requirement that there must be 'a case to answer': there must be evidence which, *if accepted*, could rationally persuade the jury beyond reasonable doubt. Reasons such as a disposition to trust a particular witness come into play within what Raz calls the 'latitude in the space of reasons', where it is rational to believe something (or someone) but not irrational to withhold belief.<sup>68</sup> Though such reasons are not specifically relevant to experts, and may indeed be less relevant to experts than to other witnesses,<sup>69</sup> a sentiment of trust in a particular expert or disposition to trust some class of experts, or experts in general, might be the sort of 'first person' reason that could figure in a juror's or judge's deliberations.

## Conclusion

When assessing expert evidence, the task of juries and judges is to determine the strength of the reasons *accessible to them* (and to the public at large) for believing what experts assert. We should be slow to accept arguments that juries (or scientifically unqualified judges) are incompetent to assess expert evidence. The only competence required is ordinary rationality, and citizens in a democracy (as well as judges!) should be presumed competent to make rational judgments. However, there are reasons to think that juries and judges may be tempted to accord more deference to experts than is appropriate in legal contexts, and the law should (and to some extent already does) control expert evidence so as make clear the grounds for doubt as well as belief and minimise the temptation to accord it undue authority.

A more general conclusion that can be drawn from the above analysis is that laypeople have considerable leeway in rationally believing experts or withholding belief. Judgments are likely to depend partly on evidence of the experts' reliability, partly on trust, and partly on the balance between the desirability of forming some definite belief about the matter in question and avoiding a false belief. The degree to which laypeople may rationally reject or be sceptical about the findings of experts has often been defended by those who adopt a social constructionist view of scientific knowledge.<sup>70</sup> The arguments advanced here are quite independent of social constructionism, but they point in a similar direction.

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## NOTES

<sup>1</sup> See Raz, *Between Authority and Interpretation* (Oxford: Oxford University Press, 2009), p. 155.



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- <sup>2</sup> Harry Collins and Robert Evans, *Rethinking Expertise* (Chicago: University of Chicago Press, 2007).
- <sup>3</sup> Joseph Raz, *The Morality of Freedom* (Oxford: Oxford University Press, 1986) pp. 41, 86
- <sup>4</sup> E.g. *ibid.*, 53; Raz, *op. cit.* n. 1, pp. 154-159.
- <sup>5</sup> Linda Trinkaus Zagzebski, *Epistemic Authority: A Theory of Trust, Authority and Autonomy in Belief* (Oxford: Oxford University Press, 2012).
- <sup>6</sup> *Ibid.*, p. 65
- <sup>7</sup> See Corinna Kruse, 'The Bayesian Approach to Forensic Evidence: Evaluating, Communicating and Distributing Responsibility', *Social Studies of Science* 43(5) (2013): 657-80
- <sup>8</sup> John Hardwig, 'Epistemic Dependence', *Journal of Philosophy* 82 (1985) 335-49, pp. 335-7, 343.
- <sup>9</sup> Elizabeth Fricker, 'Testimony and Epistemic Autonomy' in J. Lackey and E. Sosa (eds.) *The Epistemology of Testimony* (Oxford: Oxford University Press, 2006), p. 241.
- <sup>10</sup> Alvin I. Goldman, 'Experts: Which Ones Should You Trust?' *Philosophy and Phenomenological Research* 63(1) (2001): 85-110.
- <sup>11</sup> Hardwig, *op. cit.*, p. 341
- <sup>12</sup> National Academies of Science, *Strengthening Forensic Science in the United States: A Path Forward* (Washington DC: National Academies Press, 2009; Robyn Dawes, *House of Cards: Psychology and Psychotherapy Built on Myth* (New York: Free Press, 1996)
- <sup>13</sup> *Ibid.* pp. 346-9; John Hardwig, 'The Role of Trust in Knowledge' *Journal of Philosophy* 88(12) (1991): 693-708.
- <sup>14</sup> Frederick Schmitt, 'On the Road to Social Epistemic Interdependence', *Social Epistemology* 2(4) (1988): 297-307.
- <sup>15</sup> Elizabeth Fricker, 'Against Gullibility' in B.K. Matilal and A. Chakrabarti (eds.) *Knowing from Words* (Dordrecht: Kluwer, 1994).
- <sup>16</sup> *Op. cit.* p. 30
- <sup>17</sup> *Ibid.* p. 110.
- <sup>18</sup> *Ibid.*, p. 105
- <sup>19</sup> *Ibid.*, pp. 106-7
- <sup>20</sup> *Ibid.*, p. 107. H.L.A. Hart anticipated this analysis in *Essays on Bentham* (Oxford: Oxford University Press, 1982), p. 261.
- <sup>21</sup> Déirdre Dwyer, *The Judicial Assessment of Expert Evidence* (Cambridge: Cambridge University Press, 2008).
- <sup>22</sup> M.S. Pardo, 'The Field of Evidence and the Field of Knowledge
- <sup>23</sup> Zagzebski, *op. cit.*, pp. 54-5
- <sup>24</sup> *Ibid.* p. 110, modified as proposed on p. 119. By 'figuring out' Zagzebski means 'identifying and weighing the evidence' that is 'available to my community or to the community of humans' (p. 110). In many cases there will be no realistic way to identify the evidence without relying on the experts, so 'figuring it out myself' is not a genuine alternative.
- <sup>25</sup> [2003] 1 Cr App R 12.

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- <sup>26</sup> *Ibid.*, paras. 32-6.
- <sup>27</sup> Gerhard Ernst, 'Reasons, Truth and the Good', paper presented at the University of Hull, 14 Feb 2014.
- <sup>28</sup> Raz, *op. cit.* n. 2, pp. 68-89; Zagzebski, *op. cit.*, pp. 114-5.
- <sup>29</sup> *Ibid.*, pp. 64, 66.
- <sup>30</sup> *Ibid.*, p. 111.
- <sup>31</sup> *Ibid.*, p. 109
- <sup>32</sup> For a critical assessment of her arguments about religion see M.A. Benton, 'Believing on Authority' *Eur. J. Phil. Religion* 6 (2014) 133-144 (also available at <http://users.ox.ac.uk/~sfop0431/BelievingOnAuthority.pdf>)
- <sup>33</sup> Richard Moran, 'Getting Told and Being Believed' in Lackey and Sosa, *op. cit.*; Zagzebski, *op. cit.*, pp. 122-3.
- <sup>34</sup> Zagzebski, *op. cit.*, p. 129.
- <sup>35</sup> Hubert Dreyfus and Stuart E. Dreyfus, *Mind Over Machine: The Power of Human Intuition in the Era of the Computer* (New York: Free Press, 1986)
- <sup>36</sup> Duncan Pritchard, 'Testimony' in R.A. Duff, L. Farmer, S. Marshall and V. Tadros (eds.) *The Trial on Trial, vol. 1* (Oxford: Hart, 2004) pp. 114-5.
- <sup>37</sup> Fricker, *op. cit.* n. 8, p. 232.
- <sup>38</sup> Zagzebski, *op. cit.*, pp. 131, 136
- <sup>39</sup> Fricker, *op. cit.*, p. 236.
- <sup>40</sup> Zagzebski, *op. cit.* p. 158.
- <sup>41</sup> Lara Buchak raises similar concerns about the type of account of religious belief that Zagzebski adopts: 'Can it be Rational to have Faith?' in J. Chandler and V.A. Harrison (eds.) *Probability in the Philosophy of Religion* (Oxford: Oxford University Press, 2012), p. 229.
- <sup>42</sup> A willingness to believe what a trusted medical practitioner (mainstream or complementary) tells one about the effectiveness of a treatment might be an example.
- <sup>43</sup> Zagzebski, *op. cit.*, p. 246
- <sup>44</sup> *Ibid.*, p. 29.
- <sup>45</sup> Benjamin McMyler, *Testimony, Trust and Authority* (Oxford: Oxford University Press, 2011), Ch. 5.
- <sup>46</sup> W.A. Wagenaar, P.J. van Koppen PJ, and H.F.M. Krombag, *Anchored Narratives: The Psychology of Criminal Evidence* (Hemel Hempstead: Harvester Wheatsheaf, 1993), pp. 195-6.
- <sup>47</sup> 1953 SLT 54
- <sup>48</sup> *Ibid.*, p. 57
- <sup>49</sup> Lord Strachan, *ibid.*, p. 56
- <sup>50</sup> *Ibid.* p. 55.
- <sup>51</sup> [2011] EWCA Crim 2826
- <sup>52</sup> [2011] EWCA Crim 2826 at [17].
- <sup>53</sup> *R v FNC* [2015] EWCA Crim 1732, para. 33.

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- <sup>54</sup> *R v Turner* [1975] QB 834; *R v Robinson* [1994] 98 Cr App R 370.
- <sup>55</sup> *R v D(D)* 2000 SCC 43, para. 53
- <sup>56</sup> Miranda Fricker, *Epistemic Injustice* (Oxford: Oxford University Press, 2007); [Author, 2009].
- <sup>57</sup> [2011] 1 Cr. App. R. 9
- <sup>58</sup> Bernard Robertson, C.A. Vigneaux and Charles E.H. Berger, 'Extending the Confusion about Bayes', *Modern Law Review* 74(3) (2011): 430-455.
- <sup>59</sup> *R v T*, *op. cit.*, para. 73.
- <sup>60</sup> *Ibid.*, para. 86
- <sup>61</sup>
- <sup>62</sup> E.g. L. Jonathan Cohen, *The Probable and the Provable* (Oxford: Oxford University Press, 1977); Alex Stein, *Foundations of Evidence Law* (Oxford: Oxford University Press, 2005); Ho Hock Lai, *A Philosophy of Evidence Law* (Oxford: Oxford University Press, 2008).
- <sup>63</sup> R.A. Duff, Lindsay Farmer, Sandra Marshall and Victor Tadros *The Trial on Trial, vol. 1* (Oxford: Hart, 2007) pp.
- <sup>64</sup> *Ibid.* On the relation between practices of blame and full belief see also Lara Buchak, 'Belief, Credence and Norms', *Philosophical Studies*, forthcoming (draft available at philpapers.org)
- <sup>65</sup> [Author, forthcoming.]
- <sup>66</sup> Robert P. Burns, *A Theory of the Trial* (Princeton: Princeton University Press, 1999).
- <sup>67</sup> Ian Dennis, *The Law of Evidence* (5<sup>th</sup> ed., London: Sweet & Maxwell, 2013) pp. 504-5.
- <sup>68</sup> Joseph Raz, *Engaging Reason: On the Theory of Value and Action* (Oxford: Oxford University Press, 1999), p. 9.
- <sup>69</sup> Samuel R. Gross, 'Expert Evidence' *Wisconsin Law Review* (1991): 1113-1232, pp. 1132-6.
- <sup>70</sup> E.g. Roger Smith and Brian Wynne (eds.) *Expert Evidence: Interpreting Science in the Law* (London: Routledge, 1989); Sheila Jasanoff, *Science at the Bar* (Cambridge, MA: Harvard University Press, 1995);