Judges’ socio-technical review of contested expertise

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Abstract

This article investigates how civil court judges practice meta-expertise in cases that feature contradictory and inconclusive medical expertise. The empirical case study consists of a sample of eleven Helsinki district court verdicts from 2014-2017, drawn from a larger number of similar traffic insurance compensation cases. The case-type features a medical controversy concerning traumatic brain injury (TBI) diagnostics. I contend that the difficulties judges face in evaluating the medical expertise result from epistemic asymmetries between legal and medical professionals. This study highlights the importance of explaining and understanding how judges overcome uncertainty and discriminate between expert positions. Drawing from earlier studies on meta-expertise and judges’ practice of evaluating expertise in court, I introduce the concept ‘socio-technical review’ to describe judges’ practice of facilitating highly technical and esoteric scientific expertise to needs of judicial decision making. I argue that socio-technical review is a special form of practicing meta-expertise, which effectively allows meta-experts to manage epistemic asymmetries. In examining how meta-expertise is practiced in the TBI case-type, the paper contributes to general sociological understanding of decision-making under uncertainty and suggests further studies in comparable settings.

Keywords

socio-technical review, meta-expertise, law and science, traumatic brain injury

Introduction

This article examines meta-expertise in the context of judicial decision-making in court. The general problem I address is how actors can make socially acceptable and legitimate decisions
based on knowledge derived from fields of expertise in which they are not expert. Making a credible decision requires some way to effectively choose between competing knowledge claims, but what can that discrimination be based upon in the absence of deep understanding of the disputed issue? This theoretical problem pertains to decision-making across institutional and professional boundaries as well as to more specific questions about the role of expertise in public policy-making or governance (Collins and Evans, 2007; Goldman, 2001; Kutrovátz, 2010; Lynch, 2007: 19-20; Turner, 2014).

Trial judges are routinely confronted with expertise and evidence in scientific and technological fields in which they have no professional, specialist or other experience-based competence. Furthermore, in some case-types, judges’ decision-making is complicated by contradictory or otherwise inconclusive expert knowledge. Recurrent epistemic asymmetries between experts and judges creates a condition of uncertainty, a condition the judges have to overcome in order to make a decision (cf. Redmayne, 1999).

In this article, judges’ practices of adjudicating under uncertainty are examined in the context of traffic accident insurance compensation cases at Helsinki district court. The disputed issue is whether insurance companies should compensate for plaintiffs’ disabilities. The disabilities allegedly result from traffic accident-related traumatic injuries to the brain and/or cervical vertebrae. The court verdicts treated in this article have significant consequences not only for plaintiffs’ lives, but also more broadly for the insurance system and its relation to the legal system. The issue is topical; over the past few years, Finnish media have politicized the kinds of cases I examine here. Finland is, in general, a country with extensive social security and social insurance systems, and with high levels of public trust towards state institutions (European Commission, 2017: 5-22). The culture is not ‘litigious’ in the way that is the case, for example, in the US (Jasanoff, 1995: 1, 2005: 49), yet the studied case-type is a prime example of resolving social conflicts through court action.

In Finland, district courts are general courts of law that utilize adversarial legal procedure. For compensation cases, both parties bring technically complex, esoteric and contradictory medical expertise to court to help them win the decision. Judges, who are generalists, or non-specialists, are thus forced to take a standpoint in relation to contested scientific expertise. The question is: How do professional judges manage to justify their discrimination between contradictory expert claims despite not having the requisite expertise to deeply understand the claims?

As Edmond (2000: 216) argues, the traditional approach to the science-law conundrum, employed especially by legal practitioners and doctrinal legal scholars, is to systematize approaches to expertise with the help of rules, principles and methods, often drawing upon ideals associated with science (also Caudill and LaRue, 2006). Jasanoff (1995: xiii-xiv, 2005) likewise asserts that the relationship between law and science is often presented as a problem of how law or the courts could better do justice to science in their decision-making (cf. Edmond, 2001: 191-193). Jasanoff (1993, 1995, 2005), however, exposes science (both inside and outside of court) as a situated and co-constructed social practice that often falls short of law’s idealized and monolithic representation of science (also Edmond and Mercer, 1997).

This paper explores individual actors’ role in resolving expert disputes, and explains how judges approach highly technical, esoteric and contradictory expert accounts. The investigation complements co-constructionist accounts (e.g. Edmond, 2001; Edmond and Mercer, 2000; Kirkland, 2012) that examine how parties to a legal dispute participate in negotiation and production, or co-construction, of knowledge (and consequently the trial outcome). Though the co-constructionist perspective is a potent and productive approach, it might also overlook individual
actors’ manner of coming to grips with expertise as well as authoritative actors’ influence in decision making.

This study also relates to ethnomethodological accounts of pragmatic legal work in courtroom (e.g. Burns, 2001, 2008; Lynch, 2004). The approach taken here reflects the pragmatic idea that despite perceived problems in the relation between science and law, judicial decisions considered legitimate and socially acceptable are routinely made in everyday practice regardless of epistemic asymmetries between professionals, experts and institutions (cf. Shapin, 1999: 7-8). Even if it ‘has long been recognized, that non-experts have no clear way to resolve disputes when experts disagree with one another’ (Lynch, 2007: 19), there must be some way to justify a choice between experts and their claims in order to bring about a legally and socially effective resolution (cf. Coopmans and Button, 2014; Derksen, 2000; Lynch, 2014; Soler et al., 2014).

In the case-type I examine, deciding whether plaintiffs are entitled to compensation for disability depends on judging expert claims about whether the plaintiff has suffered a brain injury or not. It can be objected that practical legal considerations, such as burden of proof and sufficiency of evidence, are sufficient to decide cases such as these, and in this way provide means to avoid engaging with highly technical expert claims (Burns, 2008: 127-129). However, regardless of the qualities of the medical evidence presented, the judge must still provide a rationale for a decision based on what experts have testified in courtroom. Arguing for this rationale necessitates judgments about expertise, experts and expert claims. In this article, I provide an empirical account and explanation of how trial judges supply the rationale by managing epistemic asymmetry in one jurisdiction and one case-type: traumatic brain injury cases (henceforth TBI cases) in Helsinki district court.

Generalizing from the TBI cases, I theorize judges’ adjudication of medical (specifically, neurology and other related specialties) and neuropsychological expertise as the practice of meta-expertise (Collins and Evans, 2007: 45-76; cf. Lynch and Cole, 2005). Meta-expertise is understood here as expertise in making judgments about, or based on, another field of expertise which is of varying level of familiarity to the judging actor (Collins and Evans, 2007).

The TBI cases contain many types of knowledge that are of varying levels of difficulty for the judges to evaluate. My initial working hypothesis, by and large proven, held that the more technically complex and esoteric the evaluated expertise is, the less capacity judges have to make direct judgments on expertise. When facing technical and esoteric expertise, judges, instead of making direct judgments, review and compare what experts claim regarding issues of technical substance as well as what experts claim regarding the social structure and dynamics of their field(s) of expertise and other experts’ standing in the field. Social structure here refers to the field of TBI diagnostics and care, and the relative hierarchy and position of different actors, specialties and institutions on that field. The judges’ understanding of both technical substance and social structure is mostly contingent on courtroom interlocution, as they are not practicing specialists themselves.

Illustrating the discussion with themes drawn from the analysed case verdicts, I show how judges, with the help of evaluative criteria, make what I propose to call a ‘socio-technical review’ (STR) of expertise. I argue that STR is a specific manner of practicing meta-expertise. Judges practice meta-expertise by evaluating two modes of expert claims, social and technical, and by resorting to two loci of judgment, one originating directly from judges and the other from experts. Combining the mode and locus of judgments, I examine how judges discuss neurological and neuropsychological expertise and discriminate between experts and their claims.
In what follows, I begin by discussing meta-expertise and establishing the theoretical framework for analysing judges’ practice of adjudicating expert disputes in Helsinki district court TBI case verdicts. After a brief characterization of what I mean by STR, I move on to methodology and the data. Next, I discuss uncertainty, meta-expertise and STR in empirical data. I examine judges’ practice of making direct judgments on expert claims, after which I examine judges’ practice of STR. The article then concludes with suggestions for further studies.

Defining socio-technical review

The concept of meta-expertise refers to a practice of evaluating expertise of low familiarity to the actor making judgments about, or based on, that expertise (Collins and Evans, 2007: 45-76). Meta-expertise can further be defined in contrast to deference, which denotes a submission to an external authority, whether epistemic, legal or administrative, for defining what to express as true in a given issue (e.g. Horwitz, 2008: 1069-1100). To simply defer is to substitute a perceived superior judgment for one’s own. From a principled point of view, the deference of the courts to experts is problematic because it subverts the independence of judicial power. Deference also opens the door for unbridled approval of expert claims, which might include a range of extra-scientific interests.

The extent to which expertise is deferred to or contested in court varies with the type of expertise. Forensic expertise, and especially techniques such as DNA profiling, enjoy broad approval in criminal courts (Prainsack and Kitzberger, 2009), even if forensic evidence is sometimes fiercely contested in courtrooms (Lynch et al., 2008). Forensic sciences are a prime example of knowledge that is both legal and scientific, an instance of the “seamless web” between scientific and non-scientific forms of life (Edmond, 2001: 192; see also Edmond and Mercer, 1997: 340-341). Helsinki district court judges find it difficult or even irrelevant to question medical expertise, and this is especially true of some forensic specialties such as forensic psychiatry. For all that, and in distinction to criminal cases that often rely on forensic evidence, TBI case medical experts, statements and testimonials are not tied to legal institutions and requirements. Not only is the rationale behind these testimonials different and geared towards medical diagnostics and care of TBI, but also this institutional externality to the legal system affects how expertise is evaluated because the issue of epistemic credibility is much less settled.

Evaluating expertise is particularly challenging in civil court cases that feature contradictory expertise. Expertise in the TBI cases tends to be highly technical and esoteric, i.e., the scientific content and social structure and dynamics of the fields of both neuroscience and neuropsychology are not easily accessible to outsider meta-experts such as judges. In addition to expertise being difficult to understand, it is contested, in that the featured experts disagree. Simply deferring to experts is therefore not possible, as it does not provide a basis for making a choice between two or more expert positions. Further, if the relation between court and experts is one of simple deference, then asking for a second expert opinion only compounds the difficulties, as it results in meta-expert’s regress: The best experts produce the most accurate facts, but identifying and siding with the best expert (or her claims) requires that the judge already knows which facts are most accurate to begin with (cf. Kutrováť, 2010: 484-485).

Normatively then, although experts’ judgments about disputed medical or scientific issues can be understood as superior in epistemic terms to judges’ meta-expert judgments, judges should still be the ones authoring the decision for the sake of justification and legitimacy. The practice of meta-expertise can theoretically be understood, therefore, as a practice of managing epistemic asymmetries, finding socially and professionally (and, in the court context, legally) acceptable and
legitimate grounds to discriminate between evaluated expert positions, thus breaking the meta-
expert’s regress cycle.

The meta-expert’s competence level and position in relation to the evaluated expertise determines
the kind and quality of justification she is able to give in support of her decision. The variance of
actors’ substantive expertise in relation to the evaluated field is theorized by Collins and Evans
(2007: 45-76), who distinguish several types of meta-expertise according to actors’ competence in
and social proximity to the evaluated field of expertise. Pertaining especially to this paper, Collins
and Evans (2007) make a distinction between external and internal meta-expertise. While internal
meta-expertise relies on some approximate understanding of the substantive side of the judged
expertise, external meta-expertise relies on understanding the circumstances in which an expert
claim is uttered. In the latter case, Collins and Evans (2007: 45-52) argue, technical judgments and
decisions are made via non-technical means; i.e., conclusions are reached by making social
judgments about who to believe rather than scientific judgments about what to believe. Such
judgments provide at least a partial ‘escape from uncritical reliance on expert authority’ (Collins

These judgments about who to believe are credibility judgments (Shapin, 1995) based on social
expertise. Social expertise in the TBI case context refers to situated understandings of the dispute:
how case history and dynamics, court processes and professional conventions for practice inform
and condition the disputed issue and presented expert claims. When using social expertise in a
meta-expert judgment in a technical issue (as when TBI case judges have to decide whether a
plaintiff has brain injury based on contradictory expert claims), socially inferred indications of
credibility come to stand in for technical judgments gauging the veracity or accuracy of expert

In my analytical framework, the first axis of description, namely the mode of judgment, consists of
making a distinction between social knowledge-claims and technical knowledge-claims. This
distinction is a recurring feature of earlier studies on meta-expertise. Thus Kutrovázt (2010: 480-
482) distinguishes between substantial knowledge and contextual knowledge; the latter provides
non-experts the means to knowing with experts and making sound judgments on expertise, without
knowing exactly what the experts know. Kutrovázt (2010) discusses meta-expertise as social
intellect directed at the institutional structure and dynamic of science, but he is somewhat sceptical
of the idea that the public at large could develop such a social intellect. It seems plausible, however,
that in the limited context of litigation in one case-type, meta-experts (judges) could, by reviewing
the social circumstances, render intelligible the social structure and dynamics of the evaluated fields
of expertise (cf. Edmond and Mercer, 1997: 342). This comes fairly close to what Collins and
Weinel (2011: 408) call sociological discrimination, which refers to a kind of meta-expertise that
scholars investigating the social organization of science might develop. Similarly, Goldman (2001),
from a philosophical and theoretical perspective, examines a number of social factors as criteria that
potentially provide reliable epistemic bases for meta-expert evaluation of expertise, and in this way
investigates how non-experts might be able to escape blind reliance on expertise. The
social/technical distinction is evident, for example, in Goldman’s distinction between esoteric and
exoteric statements: esoteric statements’ truth values are inaccessible to non-experts (Goldman,
2001: 94).

I am using this distinction between social and technical claims for reasons of analytical clarity to
track down how judges discriminate between expert positions. As will become evident in my
analysis, social and technical expert claims are often intertwined, and are not mutually exclusive
categories. Another important consideration relevant to the social/technical distinction is that not all
fields of expertise identified as scientific have a robust ‘technical’ foundation (see Burns, 2008).
Such is often the case with, for example, novel evidence produced with experimental technology, or the type of psychiatrist whose expertise is substantively bound to clinical experience and tacit understanding of mental conditions and how they manifest. Law courts also see a lot of expertise that is technical but is not underpinned by the type of systematic inquiry that characterises science. Moreover, as Caudill and LaRue (2006: 1-4) argue, trying to define and understand scientific practice as a technical endeavour – that is, as a methodological means of obtaining knowledge – without regard for the social features of knowledge-production results in a one-dimensional understanding of expertise. In this study of the TBI cases, the distinction between social and technical refers to different types of expert claims that describe different facets of the given field of systematic inquiry the expertise is based upon; its analytical use therefore calls for a situated understanding of the kind of expertise in play and sensitivity to the dispute at hand.

The second axis of description is the locus of judgment. Goldman (2001: 94-97) suggests that ‘indirect argumentative justification’, which involves a meta-expert judgment about dialectical superiority and performance between two incompatible expert positions, could offer bases for decision-makers despite their lack of technical competence in the evaluated field. My inquiry can be seen as an empirical development of his tentative idea of evaluating the dialectical relation between experts. Thus, judges can either make direct meta-expert judgments on both social and technical expert claims, or judges can make review-based indirect judgments. In the latter case, judges review experts’ social claims, i.e., what experts say about fields of expertise and the standing that other experts have in that field, and judges also review experts’ technical claims, i.e., how experts discuss and opin about the veracity of other experts’ technical claims of substance regarding the evaluated case.

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Table 1. Framework for analysing mode and locus of judgments in TBI case verdicts. The framework is a product of iterative movement between analysis of case data and earlier theoretical literature, and is not to be taken as a normative framework for how meta-expert evaluation of expert claims should ‘properly’ be performed.

Analysing TBI cases in this framework, I arrive at the conclusion that judges’ practice of meta-expertise has both characteristics of direct judgment of social and technical expert claims and characteristics of review-based, indirect judgment of social and technical expert claims. The more technically complex and esoteric the expertise is in relation to judges’ competence in the evaluated case.
field, the more difficulty judges have in making direct meta-expert judgments, since judges do not have social or epistemic access to the professional field or an understanding of the technical content of the field. The review-based indirect judgment of both social and technical expert claims is what I have termed the socio-technical review of expertise. In evaluating expertise in cases that feature an epistemic asymmetry between judges and experts, the STR allows judges, as meta-experts, to discriminate between expert positions.

TBI cases in Helsinki district court

The case study material consists of eleven Helsinki District court case verdicts from 2014-2017, a small sample drawn from a much larger number of similar TBI cases (a list of the sample cases is available from the author). The eleven cases were selected because they each involved prolonged and highly contested processes. The paper also takes advantage of twenty interviews that I conducted with Helsinki district and appeals court judges in 2016. These thematic interviews about the use of medical expertise in court provided a medium for reflection and scrutiny on the paper’s theoretical ideas and empirical analysis. That is, though I primarily base the analysis in this article on the verdict material, the interviews serve as secondary and supporting material. I personally collected both data sets as part of a larger study concerning medical expertise in court.

The TBI cases feature individual plaintiffs facing insurance companies, and the legal dispute concerns insurance compensation for disability resulting from head and neck trauma. As the resolution depends on medical assessment of the existence and cause of the brain and neck injuries and their effects on the plaintiff, judges are required to evaluate medical-scientific expertise and evidence. The Finnish code of judicial procedure (Ministry of Justice, Finland, no date: 1.1.1734/4, Ch. 17) gives next to no guidelines for evaluation of expertise, which elevates the importance of individual judges’ professional skill and the relevance of legal praxis in reaching a legal closure (cf. Tadei et al., 2016). Another reason to concentrate on judges is that Finnish courts do not use full lay juries, and the examined TBI cases only employ professional judges.

In several of the TBI cases analysed for this paper, experts representing over ten different professions, including neurology, radiology, neuropsychology, insurance medicine and psychiatry, provided expert statements and oral testimonials. Defendants, plaintiffs and court judges regularly use the same experts from the same institutions. The judges’ approach and reaction to expertise is thus conditioned by a fairly uniform set of claims, actors and issues, which recurs in every trial. Judges therefore have a consistent case history to work with, which also limits judges’ repertoire of evaluating expertise. Of the eleven cases included in this article, ten were decided by nine different professional judges, and one by a collegium of three judges.

Coding the TBI case verdicts with Atlas.ti software, I first identified the criteria with the help of which judges discriminated between experts and their claims. The criteria make up the thematic of choice between competing expert positions. Criteria experience, track record, credentials, inter-professional hierarchy and reliability and validity of medical knowledge were selected for discussion on the basis of their prevalence in the data, and their contested character in the verdict. I was also guided by earlier studies in identifying the criteria in the data (e.g. Collins and Evans, 2007: 45-76; Edmond, 2000; Goldman, 2001; Shapin, 1995; Turner, 2014). The coded excerpts were analysed using the framework of Table 1.

In what follows, I first describe the uncertainty that trial judges encounter in evaluating medical diagnostic expertise and technology. In the subsequent sections, the fourfold categorization of Table
1 is put to work in examining how judges legitimate their discrimination between experts and their claims.

Uncertainty in the TBI cases

As instances of fact finding, all contested court cases entail uncertainty; triers of fact typically work in contexts in which there is no consensus about ‘the trustworthiness of individuals, institutions and the efficacy of their knowledge’ (Edmond and Mercer, 1997: 349). The diagnosis and care of traumatic brain injuries is a particularly complex and contested medico-technological issue. This leads to contradictory expert claims in the courtroom and complicates judges’ task of weighing the relative merits of expert claims.

The TBI case evidence occupies two temporal levels. The plaintiff’s disability has typically been observed in fairly recent neuropsychological examinations, which then usually lead to radiological examinations such as standard magnetic resonance imaging (MRI), diffusion tensor imaging (DTI) and functional magnetic resonance imaging (fMRI). These imaging technologies of the brain and cervical vertebrae produce, at least in evident injury cases, physiological evidence of the injuries and causes of disability. After receiving an injury diagnosis, the plaintiff has unsuccessfully applied for insurance compensation, prompting the litigation process.

In addition to investigating recent medical evidence, the court needs to establish the cause for disability. In typical cases, the alleged cause, a traffic accident, occurred several years before the litigation process. The court assesses retrospectively whether the plaintiff has received either whiplash injury or brain damage as a result of the accident. Judges probe the injury mechanism and traumatic potential of the forces involved in the accident, as well as the initial diagnoses and entries into emergency room care logs and police reports, which are often found lacking in descriptive rigor. The court discusses evidence for or against early signs and severity of head and neck trauma with contributing assessments from experts. Judges also track plaintiff’s medical history before and after the accident to determine whether it is consistent with plaintiff’s claims and current medical understanding of traumatic injuries. Especially if supported by medical history or accident description, the insurance companies’ attorneys typically try to cast doubt by pointing to alternative explanations, such as psychiatric disorders, for the plaintiff’s impairment. In doing so, they downplay the severity of the injury and dispute the assertion of a causal relation between the accident and the symptoms. In their verdicts, judges question these alternative and probable causes and identify criteria to either endorse or exclude other probable causes (cf. Edmond, 2001: 196-197). Consider this discussion of causation that was part of a judge’s deliberation:

In legal praxis, an injury or an illness is usually considered to have been caused by a traffic accident if the traffic accident and the injury or illness are connected, in medical assessment, by a probable relation of cause and effect. However, the evaluation of the causal relation is, in the last instance, legal deliberation by its character. In addition to medical reporting, legal deliberation takes account also of other-than-medical factors, on the basis of which conclusions about causation can also be made. (Case 1)

Assessment of causality and probability is based on intuitive social understanding, ‘common sense’, of how things usually relate to each other, bolstered by professional experience and skill. For the most part, the basis of this kind of rationalization is implicit, and rarely as explicit as in the
following excerpt. Discussing the possibility of post-traumatic amnesia, an early sign of brain damage, the court states that

according to [the defendant’s expert] Professor X, whose testimony was heard in court, the repeated passing out [of the plaintiff] during the taxi ride to hospital would have been logged into the medical report. The court considers the [defendant’s expert’s] testimonial as credible, since according to common experience, the taxi driver would have mentioned about [the plaintiff] passing out when leaving the patient at the health centre. The information about such immediate events after the accident would thus have been preserved in the medical record. (Case 8, emphasis added)

However, judges’ practical understanding based on common experience does not suffice when attention shifts to medical experts’ diagnostic expertise. It is useful to pause here, for this is central to understanding what judges are up against in their decision-making. The plaintiffs explicitly ask the judge to decide on two interrelated things: first, to confirm the very existence of TBI and/or a whiplash injury, and second, to establish the causal connection between the injury and the accident, which results in the obligation to compensate for the injury. Consider this excerpt:

This provisional verdict will decide on the following issues in the dispute.

Plaintiff’s demand (1):

a) Does the plaintiff have a severe brain damage and an injury of cervical vertebrae?

b) Do the aforementioned traffic accidents and the described injuries have a causal connection? (Case 3)

Question a) above gives explicit expression to a mode of inquiry that is prevalent in all eleven of the TBI case verdicts analysed here; confirming the existence of the injury is a related but separate task to the intertwined legal and medical consideration of causation. Concerning the medical diagnosis of injury, the judges must determine whether there really is an injury, what it is like, and how we can know it exists. What makes this problematic is that both diagnostic expertise and the use of examination methods are contested. For example, medical controversies are discussed explicitly in at least five of the eleven analysed verdicts. Typically, the court notes that while the presented medical evidence is extensive and central to deciding the case, ‘the medical professionals have voiced a difference of opinion … about some of the medical examination methods, and especially conclusions drawn from them’ (Case 5).

In addition to these general descriptions of the controversy and the ensuing problem for decision-making, judges make note of more specific contradictions. These descriptions involve questions related to, for example, the injury type or a specific diagnostic technology. In one TBI case, the judge notes that experts in neurology and neuroradiology disagree about the ‘significance of the so-called DTI-imaging in the diagnosis of brain injury. … Finnish researchers have published contradictory conclusions about this issue. No comparative national studies have been made’ (Case 6).

Contradictory and inconclusive expert opinion about diagnostic technology and practice complicates courts’ decision making. Judges cannot assess the medical evidence directly, since they do not have the requisite understanding of medicine, diagnostics and technology. Regardless,
judicial decision making is ideally based on careful consideration of facts, and the resulting approximation of the truth should be as close as possible to the ‘material truth’, understood in legal praxis as the objective external reality. In the TBI cases, however, central aspects of the material truth itself are heavily contested, and as a result, the presented medical facts are a very fluid basis for approximating the truth and making a decision.

This kind of uncertainty is a regular feature of legal processes that involve neuroscience, as implied by Jones et al. (2013: 17629) in their discussion about the promise that neuroscience holds for legal disputes. However, scientific and technological advancements in neuroscience might lead to an even greater confusion and uncertainty in courts of law. A more advanced neuroscience does not necessarily lead to increased objective clarity; it can also serve to accentuate the epistemic asymmetry between judges and experts in neurology. The novelty, experimental character, contestation and related uncertainty of the presented MRI evidence in the TBI cases can also be compared to early days of DNA profiling, which exhibited similar problems and generated disputes of reliability and validity in and outside of court. Some of the identified problems persisted long after DNA profiling gained the status of ‘truth machine’ it enjoys (Aronson, 2007: 3-6, 203-211). This indicates that the attribution of credibility to a theory or technique is not dependent on resolving expert disputes concerning that theory or technique.

No direct judgments of experts’ technical claims

TBI case judges with very little or no training in science or medicine do not venture into making direct judgments about technical expertise. The judges do not independently evaluate such highly technical issues as MRI findings and technologies, and their use in diagnostics, which indicates a knowledge gap between experts and judges. Indeed, a number of judges I interviewed explained that it is not their prerogative to ‘know better’ what medical experts report in their testimonies:

A: I don’t think that judges have the required professional competence to question [expertise]. [Judges would] have to acquire [specialized professional] knowledge to be able to evaluate. I don’t think that we can demand [that] … in practical court work, a good level of common knowledge should suffice, together with thoroughly familiarizing oneself with the statements. … How could a judge with no medical, or psychological or psychiatric experience question [the expertise], other than perceiving the expert’s conclusions somehow unreasonable? I can’t conceive of any other way. Because, we don’t really have that competence. If you dare to look at the issue with integrity, we don’t have the knowledge to do that.

Q: Thinking about the revered position that medicine has, it has to do with doctors’ … , well, it is a profession, like a lawyer, right?

A: Well [a doctor is] a specialist and should be trusted, or what he says should be trusted. If the doctor marks a bruise [to a certain part of body], then I do believe there is a bruise. (Judge 1)

The interviewee expressed that common knowledge, and common sense or experience should suffice in the analysis of medical statements, while acknowledging that judges lack crucial specialist skills and experience in medicine to properly understand the statements. The interviews indicate a fair degree of general epistemic deference to medical expertise. Thus, in another interview, a judge expressed a clear division between the juridical and medical domains, and implicitly problematized both the knowledge gap and judges’ role as mere receivers of knowledge:
I am not sure if I should say this, but [laughs ironically] … say this on tape, but … it is of course so, that when experts come to a conclusion, then, that is what we have. [No legal actor in court] is a doctor or an expert, we just make decisions based on the information we are given. (Judge 2)

In the courtroom, technical claims are presented by experts who are already accepted as legitimate actors in the fields of expertise that are deemed relevant to the disputed issue. Consequently, some judges might not see the relevance of critically evaluating their claims. But in my interviews I found that judges did not want to be mere unquestioning receivers of knowledge. This is particularly relevant to this case study because in disputes that feature highly technical substance, the ability to discriminate between technical expert claims is crucial to the outcome. Judges’ position vis-à-vis medical expertise can be described as external in terms of their lacking epistemic access to the field (cf. Goldman, 2001). Thus, to overcome this epistemic asymmetry and problems related to simple deference, judges have to resort to other means of evaluating expertise than directly judging the veracity of expert claims.

Some success in judging experts’ claims and standing directly with social criteria

While, as shown above, judges lack deep understanding of the technical aspects of the medical issue at the core of the TBI cases, they directly assess the credibility of expert claims by evaluating the social circumstances in which the claims are made. In the case of direct judgment, meta-expert evaluation of expertise is based on external criteria that function as cues for deciding whom to believe. More specifically, the criteria are external to the esoteric circle of expertise. Correspondingly, judges’ direct judgment based on external criteria does not grant epistemic access to the social structure and dynamics of the field itself.

The three external criterion I examine are credentials (Kutrová, 2010), experience (Collins and Evans, 2007) and track record (Edmond, 2000; Goldman, 2001). These criteria are well-discussed in the TBI cases. They attribute high regard for expert opinion, establish credibility and affirm experts’ epistemic authority in their professional fields. Experience, qualifications and accolades also lend legitimacy to the court verdict, as they suggest that the verdict is based on sound expertise. Do these criteria enable judges to choose between competing expert positions, and if so, exactly how?

Credentials refer to professional degree and position, specialization, or affiliation with a respected institution. Most, if not all, cases list the credentials of both court-appointed experts and party-affiliated experts. It is noteworthy that all featured experts have comparable levels of formal qualification. Therefore, though useful in recognizing substantive expertise, credentials offer judges scant basis for discriminating between the contesting parties’ experts and their claims. This common drawback of comparing credentials has been noted by Kutrová (2010: 484-485) in his review of earlier discussions of such criteria.

As an external criterion for meta-evaluation of expertise, Collins and Evans (2007: 68-9) endorse experience, which they say is of most use in trying to determine who should qualify as an expert in a given issue. Experience also figures prominently in the eleven verdicts. Experts argue for their opinion by drawing on different kinds of experience they have, of which the judges take note:

[The Plaintiff’s expert, neurologist] Z told the court that he has made over 5000 traumatic brain injury diagnoses, with a fifth of those involving a diffuse axonal injury. … Z stated that
he is asked to do peer review by international science journals almost on a weekly basis. If an article sent to a scientific journal is not outright rejected, it is sent to peer review for experts to evaluate whether the article is admissible for publication. (Case 9)

Indicators of experience, such as volume of patients the experts have treated or diagnosed, or the length of career, make experts’ claims more plausible. Both clinical and research experience count as factors that increase the credibility of the experts’ statements. Connections to and activity in the medical scientific community, such as publications and other research activities, are also mentioned as indications of top-level expertise. Thus, in one of the verdicts the court states that court-appointed witness, neurologist M, who provided a medical statement requested by the court from Hospital District of Helsinki and Uusimaa ‘has scientific publications and extensive experience in neuroradiology, i.e., brain imaging examinations’ (Case 3). However, judges consider all featured experts, regardless of their affiliation, to have adequate and comparable levels of experience. Thus, direct judgment of experience does not easily facilitate judges’ discrimination between experts.

Goldman (2001), discussing what he calls expert/novice problem, suggests that experts’ track record might be the best indication non-experts have for attributing credibility. Experts’ claims can be evaluated by monitoring experts’ past performance and verifying their track record in the evaluated issue, thus giving the non-expert some indication of the expert claims’ credibility. Collins and Evans (2007: 68), however, point out that disputed science is often inconclusive or at the very frontier of what science can reliably tell us, in which case track records do not (yet) exist.

TBI care and diagnostics, and especially the advanced imaging technologies DTI and fMRI, certainly have such disputed characters in the TBI case context. The track records of experts are invoked in some of the eleven TBI verdicts as factors that affect the credibility of experts and their claims. However, the judges usually judge track records directly in a negative sense. Edmond (2000) discusses a phenomenon called ‘repeat player’: an expert’s repeated appearances in court, especially for a single cause, leads to suspicion of other interests prevailing over the proper professional ethos of presenting only the truth of the matter. Track record, understood as repeat player, thus describes how judges suspect a systematic bias in a regular use of a scientific expert in court (see Kirkland, 2012: 249). In addition, the way judges perceive expert witnesses’ track records to affect their credibility is dependent on the type of expertise and the kind of cases they testify in; for example, a given forensic expert’s credibility is not compromised despite regular appearances in criminal court. Experts external to the law-science nexus easily receive a credibility penalty for the same. This is similar to what Collins et al. (2015: 5-6) call local discrimination, which entails meta-experts making judgments based on social knowledge about the local domain in which the evaluated esoteric expertise is applied.

Interestingly in the light of the above, in the TBI cases both parties tend to use the same experts in each case. Especially on the plaintiff’s side, the team of experts is almost identical in each case, but the judges usually do not consider this a problem – or at least do not discuss it in their verdicts, and thus have not considered it a deciding factor in the case. One instance to the contrary is displayed in the next excerpt, an instance of direct judgment by the judge:

The plaintiff’s witness, neurologist Q told the court that she had met the plaintiff and her husband once in late 2015 when the trial was already incepted. The material now used as evidence was handed to her only later. On the other hand, the plaintiff had already had an MRI scan in a private medical facility in June 2012, and DTI-imaging with Q’s invoice in May 2012. In addition, Q told the court that she has earlier served as a designated expert for the plaintiff’s attorney a few dozen times in similar court cases. The court considers these
facts to weaken the reliability of the observations and conclusions [the plaintiff’s expert] Q has made in the case. (Case 4)

The apparent inconsistency, as noted by the judge, in comparing the reported and actual interaction between the expert and the plaintiff weakens the expert’s credibility. Even more interestingly, Q’s relation to the plaintiff’s lawyer clearly affects the perceived reliability of her testimony. Repeat court appearances and testimonials indicate that the expert’s interests could somehow be related to something else than voicing the objective medical truth.

This broader concern relating to secondary interests features prominently in another case verdict (Case 10), in which the judge directly discusses plaintiff’s neurologists’ and neuropsychologists’ willingness to defend their earlier observations and conclusions in the medical issue, despite the fact that opposing positions were voiced during the trial. The judge notes that neurologist Q specifically denies that her medical statements have ever contained mistakes, and that her resignation from a private rehabilitation centre was rather due to being pressured by the newly appointed senior neurologist of the centre. According to Q, the disagreement leading to resignation was about whether medical statements should link patients’ brain damage to specific traffic accidents, thus making insurance companies liable for compensation. The judge concludes that based on Q’s testimonial, ‘her practice of confirming causal relations between brain injuries and traffic accidents has received criticism’ (Case 10).

The judge’s perception of Q’s professionalism partly stems from the judge’s observation of the various stances experts take towards evidence, and partly from events not related to the actual medical statement. To the judge, Q’s testimonial indicates that in addition to medical concerns, other interests have guided expert Q in her medical practice. The evaluation of these kinds of interests is well within the prerogative of trial judges, and a judge can easily make a direct judgment about the issue. The professional track record of an expert’s conduct is an external criterion judges can use for making a choice between opposing claims made by experts. Direct meta-expert judgments that are based on evaluating track records circumvent the problems associated with deference to expert authority and meta-expert’s regress that were discussed earlier.

Managing epistemic asymmetry through review of experts’ claims about standing in fields

In addition to direct judgments that are based on external evaluation criteria, which were discussed in the above section, judges also make indirect judgments based on their understanding of the social structure and dynamics of the experts’ field of expertise. This necessitates choosing between experts and what they claim about other experts’ standing in the field, providing judges a strong indication of credibility and also a proxy for evaluating veracity of expert claims (Shapin, 1995: 260-263).

In addition to directly evaluating experts’ track record, judges note the claims other experts make about them. Experts call each other’s professional competence into question, and point to problems in, for example, how those experts have marshalled evidence or argued for their diagnoses. Thus, experts fasten attention onto the perceived lack of professional neutrality, onto undue emphasis on plaintiffs’ patient narratives at the cost primary event information, and onto overlooked medical evidence. In addition, the kind of diagnostic methods other experts use is a target for criticism: Non-conventional or non-routine examinations are interpreted as indicators of suspect diagnostic practices, with the resulting diagnoses often declared subjective and their findings invalid. In one of the verdicts, the judge reviewed the defendant’s expert D, who in the judge’s account ‘told the court that she has, together with four other neurologists, filed a complaint [to a national supervising
authority] about [Q’s] practice of not using generally accepted methodology in her diagnostic practice’ (Case 7). Expert D stressed the fact that the criticized neurologist Q has a poor track record in her professional practice, which indicates a lack of competence and poor standing in the professional community.

In another instance, the judge reviewed testimony provided by the defendant’s neurologist D about the plaintiff’s neuropsychologist C. Expert D said that expert C wants to promote a brain injury rehabilitation program that C herself introduced. This, according to expert D, ‘might affect [her] conclusions. … C has [also] adopted the family’ (Case 9). Thus, the plaintiff’s expert is explicitly accused by the defendant’s expert of advancing her subjective professional interests at the cost of objective knowledge, and having a personal interest towards the family, suggesting that secondary interests in social justice take primacy over the search for truth. Since they feature in the verdict, the judge deemed expert D’s claims as pertinent in evaluating expert C’s credibility, with the result being what Kirkland (2012: 249) calls a reputational credibility failure.

In the examples above, judges review expert D’s claims about neurologist Q and neuropsychologist C. The criterion of track record is the thematic of choice here, as in the previously discussed direct judgment, but the difference is in the manner in which judges review claims that experts make about other experts. The review is an important access point to how experts themselves perceive the field of TBI diagnostics and care. A strong indication to the judge as to who to believe, the review of track record facilitates a choice between experts, and thus makes it possible to resolve the problem of deference.

The practice of reviewing expert claims is also used with the criterion of experience, though fairly infrequently. As discussed, possessing different kinds of experience indicates the possession of substantive expertise, but reviewing experience also allows judges to discriminate between experts and their claims. The following verdict excerpts present neurologists Q and Z commenting on neurologist Y’s conclusions:

[Court-appointed expert, neurologist] Y has both in her statement and in her court testimonial stated that diffuse axonal injuries are local changes in brain, sized 5-15 mm, and visible in regular MRI after the accident. [According to Y,] a claim that such injury is not visible in the brain five years after [the injury event] is not considered a credible claim in medicine. [That traces are visible] of course presumes the examined patient has actually suffered a brain injury. [Such] old traces are visible in brain if the MRI is performed with the appropriate sequence.

Witness [the plaintiff’s expert, neurologist] Z commented that Y’s testimony does not reflect a proper understanding of the characteristics of axonal injuries, since [these injuries] are not local changes, but extensive injuries of the neural network. According to (the plaintiff’s expert, neurologist) Q, Y’s perception of the size of the axonal injury is not at all consonant with medical literature and clinical reality. (Case 2)

The negative expert judgments on neurologist Y’s diagnostic competence implied that the credibility of Y’s claims was clearly affected by her lack of clinical experience in treating patients with diffuse axonal injuries. Y contested evidence provided by the plaintiff’s experts Q, Z and F, who, according to the judge: ‘testified on causation differently. In addition, Y has not personally examined [the plaintiff]. Therefore Y’s testimony is not by itself enough to weaken the evidence for causation’ (Case 2). This meta-expert judgment rested on other experts’ judgment on expert Y’s competence. Reviewing experts’ claims about other experts’ competence based on their experience allows the judges to discriminate between expert positions, because judges gain epistemic access to the social
structure and dynamics of the relevant fields of expertise to assess the meaning and relevance of experts’ experience.

Last, a central theme in contestation of diagnostic expertise in the TBI cases is the drawing of boundaries between medical (neurological) and psychological (neuropsychological) expertise. This kind of hierarchical framing, which is a typical way to make distinctions (Lynch and Cole, 2005: 286), is evident in the reviews judges make of plaintiffs’ experts. Neuropsychological testimonies are almost solely used by the plaintiffs’ legal teams because typically the plaintiffs have realized they have disabilities only after neuropsychological examinations that took place years after the injury-causing accident. Neuropsychology is therefore integral to proving disability.

Some neurologists acting for plaintiffs are keen to stress that the actual content of brain damage is neuropsychological, and that the extent of injuries and resulting disabilities can only be examined and measured by neuropsychologists, not medical doctors. More moderate claims hold that although neuropsychological tests cannot provide the sole basis for brain-injury diagnoses, the tests are nonetheless of central importance as a key element in holistic assessments. In yet another inflection, the tests are presented as the best tools to assess brain function; the variance in test results is explained by the variance in the testing tools used and the varying experience level of the testing professional. To counter the insurance companies’ experts’ standard criticism of poor reliability, plaintiffs’ neurologists often directly vouch for neuropsychological expertise and try to elevate the status of associated neuropsychologists, as exemplified by the following excerpt: ‘According to Z, J [one of the neuropsychologists who have tested the plaintiff] is the most experienced professional in the field. She has also trained everyone else in the field’ (Case 3).

Nonetheless, the ability of neuropsychologists to provide objective and reliable knowledge is severely questioned, and their access to the esoteric circle in possession of diagnostic expertise is limited. The insurance companies’ experts, mostly medical specialists such as neurologists, are quick to list the limitations of neuropsychology, in their efforts to police the boundaries of professional competence: Neuropsychology is an auxiliary field to medicine; neuropsychological tests are not etiologically specific because observed symptoms might be caused by a number of factors other than the injury; test results are subjective, unreliable and dependent upon the individual tester; and, neuropsychologists lack the requisite medical understanding and are not competent to provide diagnoses, which is the prerogative of trained medical professionals.

These diagnostic turf war exchanges, or credibility battles (Kirkland, 2012), between the parties’ experts affect how judges perceive the credibility of expert claims. Judges review these exchanges in most, if not all, of the analysed verdicts. Generally, judges align with the medical professional stance:

While assessing the presented expert statements and medical evidence, some significance must be given also to what kind of expertise the witnesses possess. For the part of the alleged injuries to the cervical vertebrae and brain, neurological expertise must be granted the greatest weight [in the consideration]. (Case 11)

In sum, the review of claims about experts’ fields of expertise and their standing in the field yields indications of what is and what is not deemed by the experts to be appropriate practice of medicine and what counts as expertise in the diagnosis of TBI in the first place. The resulting representation orders the field of expertise and individual experts’ position in it. The analysis shows that reviewing experts’ claims about their professional fields can be more potent than direct judgments in making the structure and dynamics of expertise visible, thus providing bases for discriminating between expert positions.
Managing epistemic asymmetry through review of experts’ claims of technical substance

According to earlier studies, non-experts often experience difficulty when trying to evaluate the veracity of technical expert claims (e.g. Collins and Evans, 2007; Goldman, 2001). In the TBI cases, however, judges manage epistemic asymmetry in technical expertise by conducting socio-technical review (STR). Technical expertise here involves using and interpreting the results of advanced MRI technology DTI. DTI is generally presented as experimental technology that has yet to be fully validated for clinical use. DTI findings, in general, are non-specific to any single injury type, and they could be caused by age or psychiatric disorders as well as by a brain injury (Wortzel et al., 2014). However, radiological evidence also carries great potential evidential value in court (Golan, 2004), and especially so in borderline or contested cases in which brain injury diagnostics otherwise might have very few injury-specific physiological findings to work with.

In reviewing what experts claim about DTI, the judges want to know how much weight can be given to competing expert claims about the existence of TBI, as specified in the plaintiff’s claim. The plaintiffs’ experts typically want to affirm the reliability of the diagnostic method and findings, and therefore downplay acknowledged problems regarding DTI reliability. For example, in Case 9, the judge notes the plaintiff’s expert, neurologist T’s claims that DTI imaging can be decisive in injury diagnostics. T is then seconded by neurologist Z, who admits that T’s DTI measurements do vary with the same hardware, but Z also insists that repeatability is sufficient ‘even though the method has some internal error due to margins. Even though the measured values are not the same, the interpretation is unchanged. Whether or not the findings are specific to a brain injury is another question’ (Case 9). Thus, expert Z vouches for the reliability of the method and conclusions, despite error sources that affect the measurements and thus compromise findings. Z also implies the relevance of T’s trained judgment in correcting the measurement error, which is an important factor in external assessment of the reliability and objectivity of the produced medical knowledge (cf. Derksen, 2000: 804-805).

In another example, neurologist T defends her favourable position towards DTI. T states that the presented DTI examinations, performed by a private medical institution, are very reliable. The results show a clear TBI with such strong changes in the brain that they can only be explained by a traumatic event, as illnesses or difficulties in life do not result in such injuries in these particular neural pathways. Capping the judge’s review, T goes on to criticize orthopaedist X for lacking competence in brain injury diagnostics, and for ‘claiming the DTI “does not withstand a closer scrutiny”’. Neuroradiologist T can confirm, that the repeatability of DTI examinations has been the subject of scientific studies and the results show very good repeatability’ (Case 8). Neurologist T asserts, the judge notes, that both the method and results of DTI examination do indeed withstand a very close medical scientific scrutiny.

The insurance companies’ experts are adamant in pointing out why DTI is not a suitable diagnostic tool:

The defendant’s witness neurologist N renewed her statement in court. N told the court, that DTI is such a worthless method that the size of the control group does not matter. The method is sensitive to everything. Even last night’s sleep can affect the FA-values of DTI. … A definite conclusion of a brain injury cannot be made, not even in combination with other neurological examinations. (Case 8)
Validation is another problem pointed out by defendants’ experts. MRI images are specific to the imaging facility, since control groups that provide basis of comparison as the average brain are specific to the scanner and algorithm in use (cf. Wortzel et al., 2014). Thus it is not possible to validate individual results with another scanner.

What is clear from the TBI case verdicts is that DTI is a subject of medical controversy, and this affects how the diagnostic method and the knowledge it yields is considered in court and as evidence. For the present purposes it is important to note that the kind of technical and scientific expertise that DTI represents is beyond judges’ epistemic access. The setting is conducive to meta-expert’s regress: asking for additional testimonials would most likely reproduce the original difficulty with contradictory claims.

Yet the judges still manage to escape blind reliance to experts by presenting a review of the distinctive positions that medical experts hold on DTI. Thus, in another example, the judge recounts the defendant’s expert, neurologist M, who stated that the plaintiff’s DTI findings are well within normal variation, and that plaintiff’s expert, neurologist T’s conclusions from another DTI examination [conducted a few years later] are audacious, to say the least …. [Expert] witnesses B, Q, D and R have consistently stated that DTI-tractography is an experimental examination, and it should not be used in brain injury diagnostics’ (Case 3). Consistency of two or more expert claims, as well as diachronic consistency, is a socially inferred indication of credible testimonial, and it comes to stand in for more demanding evaluation of veracity as a basis for deciding between expert positions in a technical issue (cf. Shapin, 1995: 260).

In another instance, the court draws on consistency of expertise in positively evaluating the accuracy and relevance of DTI findings, which were challenged by defendants’ experts: ‘[Experts] T, Q and M have uniformly testified that 4.5 SD deviance should be considered highly significant. The testifying neurologists have agreed that [the plaintiff] has no advancing neurological disease such as Alzheimer’s, that could explain the abnormal DTI findings. … Taking stock of the mentioned facts, the court holds that no such facts have been presented that would give cause to making conclusions [that would differ from what experts T, Q and M have proclaimed]’ (Case 2). It is noteworthy that what judges present as a dominant view within the court has no necessary connection to medical consensus outside of the court; the representation merely expresses judges’ contingent or situated understanding based on courtroom testimonial, experience and knowledge of the case-type and courtroom practices.

Judges also use other indications as proxies to legitimate their discrimination between technical expert claims, such as comparisons of quality and comprehensiveness of the testimonials as well as deep familiarization with the case at hand. Mostly these indications come through implicitly in the judges’ exposition of expert testimonials. In general, indications such as consistency are presented in a very flexible way depending on the case, which reflects the pragmatic and casuistic characteristics of meta-expert evaluation.

In sum, when endorsing expert positions, judges make choices about technical issues that have central relevance for the resolution of the case at hand. The decision about which claims to endorse is made by first reviewing experts’ statements on other experts’ claims of technical substance, inferring social indications from the review, and, based on those indications, attributing credibility to some claims and not others. A judge, who spoke about the need to ‘get behind’ the claims presented by experts, confirmed this analysis in an interview:

Q: What kind of readiness do you think judges have to set these questions that allow them to get behind the expertise?
A: Well, that is very difficult. [Judges] do not have doctoral degrees, so how could we then assess [scientific evidence]? However, often the experts criticize one another’s statements. So that’s how you get some perspective as well. They read each other’s statements and then tell us what they perceive to be the weak part in the statement. (Judge 3)

The practice of reviewing is an essential feature of making meta-expert judgments on expert claims that concern a highly technical issue. STR by no means erases the epistemic asymmetry between judges and medical experts, but it does facilitate escape from blind reliance on expert authority (cf. Collins and Weinel, 2011; Goldman, 2001), and enables TBI case judges to legitimate their discrimination between expert positions in technical issues that are out of reach for direct judgment.

Results and discussion

This study analysed the meta-expertise practiced by civil court judges in eleven Helsinki district court TBI case verdicts. The examination of the case verdicts was guided by the presupposition that different types of expert claims would elicit different types of response from judges, with the imperative of marshalling evidence into supporting a decision working as a background factor in judges’ management of expert claims. The initial analysis revealed that the TBI cases feature expertise that is contested, inconclusive and in many ways beyond judges’ epistemic access due to their lacking medical training and experience. To manage this epistemic asymmetry, judges relied on mostly reviewing what experts claimed regarding both issues of technical substance and the social structure and dynamics of the field.

The judges did, however, directly evaluate the credibility of experts and their claims with the help of such social or circumstantial criteria as credentials and experience. In most cases these criteria did not provide the judges with a clear-cut basis for choosing between expert positions. The direct evaluation of experts’ track records and histories of professional practice did provide bases on which they assessed the character and credibility of experts, as well as the claims they made. More frequently, however, judges introduced the assessment of experts’ track record as a matter of reviewing how experts themselves perceived their field and other experts’ standing in the field.

The judges similarly reviewed the experts’ boundary-making between neurology and neuropsychology. The experts’ views on competence and medical jurisdiction unlocked a perspective on the social structure and dynamics of the professional fields as well as on their relevance to the field of TBI care and diagnostics. That perspective allowed judges to evaluate credibility of experts, their standing in the field, and consequently also the relevance of their claims for the expert dispute. Judges also engaged highly technical expertise in evaluating claims about or based on the contested imaging technology DTI. By reviewing how experts discussed other experts’ claims of technical substance, judges obtained perspectives on the technical issue at hand, which otherwise would be beyond their epistemic access. The review resulted in socially inferred indications of credibility, such as consistency, that served as proxies for assessing the veracity in the evaluated technical issue of whether or not the plaintiffs had a brain injury.

The practice of meta-expertise in these cases has two distinct levels. The first level is that of direct judgment of expertise and expert claims; I call the second level the socio-technical review (STR) of expertise and expert claims. STR enables meta-expert judges to manage epistemic asymmetries and overcome uncertainty by providing socially inferred indications that allow meta-experts to attribute or de-attribute credibility to experts and the social and technical knowledge claims they make. The
more inconclusive, technically complex and esoteric the evaluated expertise, the more meta-experts resort to reviewing rather than directly judging experts and their claims.

In examining single actors, this paper complements co-constructionist studies on relations between law and science (e.g. Edmond and Mercer, 2000; Kirkland, 2012). I have sought to explain how judges overcome uncertainty and seek to escape the problems caused by simple deference to expert authority. The focus on judges assists in understanding and explaining the influence, difficulties and competence that single authoritative actors such as judges have in decision-making processes. This has direct relevance for improving judicial economy and efficiency: How training should be improved in order to increase the competence of judges to evaluate scientific and medical expertise relies on robust and empirically informed understandings of how judges engage expertise in court (cf. Jasanoff, 1998: 734; Tadei et al., 2016).

The results also indicate that the manner in which meta-expertise is practiced is context- and case-dependent. In the TBI cases, the manner in which judges manage epistemic asymmetry is conditioned by the adversarial court process and the character of the legal dispute, which centres on a medical controversy. Adopting a localized and actor-based perspective is therefore centrally important to understanding and explaining the practice of meta-expertise (cf. Coopmans and Button, 2014; Lynch, 2014; Shapin, 1995: 259-261; Soler et al., 2014). Related to this, future studies should more adequately discuss the pragmatic interplay between legal consideration and meta-expert evaluation embedded in courtroom interaction (cf. Burns, 2008; Lynch, 2004). In this paper, I have proposed STR as a modality of making meta-expert judgments in expert disputes that bear on decision making. However, the role of STR in the practice of meta-expertise needs further research to substantiate the concept and to prove its analytical utility, both in the legal context and as a general feature of practicing meta-expertise in more varied domains.
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