MERTON AND THE HOT TUB: SCIENTIFIC CONVENTIONS AND EXPERT EVIDENCE IN AUSTRALIAN CIVIL PROCEDURE

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> The *ethos of science* in that affectively toned complex of values and norms which is held to be binding on the man of science. The norms are expressed in the form of prescriptions, proscriptions, preferences, and permissions. They are legitimized in terms of institutional values. . . .
>
> . . .
>
> Four sets of institutional imperatives—*universalism*, *communism*, *disinterestedness*, *organized skepticism*—are taken to comprise the ethos of modern science.[1]
>
> Robert K. Merton, *Science and Technology in a Democratic Order* (1942)

> hot tub *n*
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> A large round bathtub filled with hot water for one or more people to relax, bathe, or socialize in; Jacuzzi *trademark*.
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> ENCARTA WORLD ENGLISH DICTIONARY (2008)

I
INTRODUCTION

This article explores the continuing influence of scientific conventions on legal practice and law reform. Focused on the introduction of "concurrent evidence," it describes how changes to Australian civil procedure, motivated by judicial concerns about the prevalence of partisanship among expert witnesses,

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1. Robert K. Merton, *Science and Technology in a Democratic Order*, 1 J. LEGAL & POL. SOC. 115 (1942), *reprinted as* ROBERT K. MERTON, *The Normative Structure of Science*, *in* THE SOCIOLOGY OF SCIENCE: THEORETICAL AND EMPIRICAL INVESTIGATIONS 267, 268–70 (Norman W. Storer ed., 1973) (emphasis added).

may have been enfeebled because they were based upon enduring scientific conventions such as the "ethos of science."[2]

Historically, adversarial legal systems have left the selection and refinement of evidence to the parties. This devolution, sometimes referred to as "free proof," applies to all kinds of evidence, including expert evidence.[3] Recently in Australia, common-law judges began to modify the way expert evidence is prepared and presented. Judges from a range of civil jurisdictions have conscientiously sought to reduce expert partisanship and the extent of expert disagreement in an attempt to enhance procedural efficiency and improve access to justice. One of these reforms, concurrent evidence, enables expert witnesses to participate in a joint session with considerable testimonial latitude. This represents a shift away from an adversarial approach and a conscientious attempt to foster scientific values and norms.

This article describes the environment out of which concurrent evidence emerged as well as the operation of concurrent evidence and related pretrial activities. It then reproduces the primary justifications for concurrent evidence before undertaking a more critical review based on observations, interviews, and engagement with specialist literatures.

II

PROBLEMS WITH EXPERT EVIDENCE: ADVERSARIAL BIAS, COST, AND DELAY

It is not only U.S. litigants and commentators who have attributed serious socio-legal problems to expert evidence.[4] Over the last decade, English and Australian judges have become increasingly anxious about the quality of expert evidence appearing in courts, particularly in their civil-justice systems. An influential survey of judges and magistrates undertaken at the turn of the millennium identified bias and partisanship as the most pressing problems with expert evidence in Australia.[5] According to its authors, judges "identified partisanship or bias on the part of expert witnesses as an issue about which they were concerned and in respect of which they thought that there needed to be change."[6] In response, Australian judges and law-reform agencies have focused their attention on "adversarial bias," the partisanship associated with the

2. *See* MERTON, *supra* note 1, at 268–70.

3. ANDREW LIGERTWOOD, AUSTRALIAN EVIDENCE (4th ed. 2004).

4. *See*, *e.g.*, Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 HARV. L. REV. 40, 50–55 (1901) (examining the various methods of utilizing expert evidence). *See generally* PETER HUBER, GALILEO'S REVENGE: JUNK SCIENCE IN THE COURTROOM (1990) (polemical account of the negative impacts of dubious scientific evidence and practices on legal and social outcomes).

5. IAN FRECKELTON, PRASUNA REDDY & HUGH SELBY, AUSTRALIAN JUDICIAL PERSPECTIVES ON EXPERT EVIDENCE: AN EMPIRICAL STUDY (1999).

6. *Id*. at 113. For criticism of this study, see Gary Edmond, *Judging Surveys: Experts, Empirical Evidence and Law Reform*, 33 FED. L. REV. 95, 127–35 (2005).

alignment or identification of an expert with a party and its interests.[7] Concerns about adversarial bias have led senior judges to change the rules of civil procedure in an attempt to discipline expert witnesses.

In order to understand the Australian legal context in which these developments occurred, it is useful to describe developments in England and to distinguish them from those in the United States. Like the United States, Australia is a federation composed of states and adversarial jurisdictions. Since European settlement, Australians have, with a few exceptions, looked to England for legal authority and law-reform initiatives. One reform, in particular, dramatically changed the Australian civil-justice landscape. By the late 1980s, most Australian jurisdictions had followed the English lead and effectively abolished the civil jury.[8] Consequently, the vast majority of civil litigation in Australia is now heard and decided by a single judge. The elevation of legally trained judges to fact finder has changed many of the rules and trial dynamics in civil litigation.[9]

During the last decade, in the wake of a prominent inquiry into civil justice undertaken by Lord Woolf and subsequent, substantial procedural reform in England, Australian judges began to modify their rules of civil procedure. Concerns with expert evidence, particularly concerns about partisanship and the costs associated with adversarial legal procedures, were prominent in Woolf's *Access to Justice* report and subsequent reforms to the English Civil Procedure Rules.[10] Throughout his inquiry, Woolf openly expressed dissatisfaction with the proliferation of expert witnesses and the growth of a "litigation support industry."[11]

Following the English example, Australian law-reform commissions and senior judges recommended and instituted a range of generic reforms in an attempt to reduce adversarial bias as well as the costs and delays widely attributed to the provision of expert evidence. These aims were embodied in legislation such as the *Civil Procedure Act*, enacted in 2005 in New South Wales, which provides that "the practice and procedure of the court should be implemented with the object of resolving the issues between the parties in such a way that the costs to the parties is proportionate to the importance and complexity of the subject-matter in dispute."[12] The objectives of the Act aspire

7. NEW SOUTH WALES LAW REFORM COMM'N, EXPERT WITNESSES (REPORT 109) 71 (2005); *see also* AUSTL. LAW REFORM COMM'N, MANAGING JUSTICE: A REVIEW OF THE FEDERAL JUSTICE SYSTEM (REPORT 89) ¶ 1.121 (2000) (discussing the advantages and disadvantages of the adversarial system).

8. There is no constitutional guarantee of a civil jury in Australia. *See* BERNARD CAIRNS, AUSTRALIAN CIVIL PROCEDURE 506–536 (6th ed. 2005).

9. Also, in most Australian civil jurisdictions, costs are normally awarded against the unsuccessful party. *Id*. at 469–471.

10. Civil Procedure Rules, 1999 (Eng. & Wales).

11. HARRY WOOLF, ACCESS TO JUSTICE: FINAL REPORT TO THE LORD CHANCELLOR ON THE CIVIL JUSTICE SYSTEM IN ENGLAND AND WALES Ch. 13, ¶¶ 1–2 (1996).

12. Civil Procedure Act, 2005, § 60 (N.S.W.).

to the "just, quick and cheap resolution of . . . proceedings."[13] The formal rationale behind concurrent evidence links this new procedure to an institutional ethos motivated by the need for more-efficient legal practice and more-impartial expert advice. Though not adopted from England, the practice of introducing concurrent evidence corresponds with an express commitment to improving legal processes and public access to law.[14]

Notwithstanding apprehension about bias, Australian judges have maintained a more liberal posture toward expert evidence than have most U.S. courts. They have not, for example, developed a particularly exclusionary approach to admissibility decisionmaking.[15] As the primary fact finders in civil litigation, Australian judges retain considerable influence over expert evidence even after admission. Unlike their U.S. counterparts, Australian judges have not had to develop an exclusionary jurisprudence to manage their dockets or become gatekeepers to prevent juries from hearing marginal expert evidence.[16] They can, for example, moderate the interpretation and weight they attach to expert evidence in their written decisions.[17] In consequence, the *Daubert* trilogy and concerns about the reliability of expert evidence have exerted very limited influence in Australia (and England).[18]

III

WHAT IS CONCURRENT EVIDENCE?

Basically, concurrent evidence (also known by the sobriquet, "hot tub") is a civil procedure employed when parties have secured the services of experts and those experts disagree about one or more issues pertinent to the resolution of a dispute.[19] Concurrent evidence enables experts from similar or closely related fields to testify together during a joint session. The openings of these sessions tend to be more informal than examination-in-chief (that is, direct) and cross-examination, which are associated with conventional adversarial proceedings. For at least part of their testimony, experts are freed from the constraints of formally responding to lawyers' questions. During concurrent-evidence

13. *Id.* § 56.

14. *See* Peter McClellan, Chief Judge at Common Law, Supreme Court of N.S.W., Address Before the Expert Witness Institute of Australia and the University of Sydney Faculty of Law: The New Rules (Apr. 16, 2007), *available at* http://www.lawlink.nsw.gov.au/lawlink/Supreme_Court/ll_sc.nsf/pages/SCO_mcclellan160407.

15. *See* Gary Edmond, *Specialised Knowledge*, *The Exclusionary Discretions and Reliability: Reassessing Incriminating Expert Opinion Evidence*, 31 U. N.S.W. L.J. 1, 1–2 (2008) (examining Australian judges' reluctance to exclude or limit expert evidence).

16. *Id.* at 49–55.

17. *Id.*

18. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993); Gen. Elec. Co. v. Joiner 522 U.S. 136 (1997); Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999). For Australian cases, see, for example, R v. Tang, (2006) 65 N.S.W.L.R. 681. For England, see, for example, R v. Gilfoyle, [2001] 2 A.C. 57 (Crim. Div.); R v. Dallagher, [2003] 1 A.C. 195 (Crim. Div.).

19. *See* King v. Military Rehab. and Comp. Comm'n (2005) 83 A.L.D. 322, ¶ 22 (Admin. App. Trib.).

sessions, expert witnesses are usually presented with an opportunity to make extended statements, comment on the evidence of the other experts, and are sometimes encouraged to ask each other questions and even test opposing opinions.

The extracts below illustrate some of the ways in which concurrent evidence operates in practice. In the Land and Environment Court of New South Wales,

> [a]t trial, the experts are sworn in and give evidence at the same time. It is often useful to have a written agenda of matters to be dealt with in oral evidence. The experts have an opportunity to explain their position on an issue and to question the other witness or witnesses about their position. Questions are also asked by counsel for the parties and the judge. In effect, the evidence is given through *discussion* in which the experts, the advocates and the judge participate. Questions and *discussion* on a particular issue by all experts can be completed before moving on to the next issue.[20]

A second description, taken from a decision by Justice Lockhart in the Trade Practices Tribunal, is one of the earliest documented examples of a concurrent-evidence procedure in operation.

> Four expert witnesses in the field of economics furnished statements and were examined orally before the Tribunal at the hearing. The Tribunal adopted the following procedure with respect to expert witnesses, for the purpose of obtaining the maximum benefit from their evidence and removing them from the adversary process as far as possible:
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> - At the conclusion of all the evidence (other than the evidence of the experts) and before the commencement of addresses, each expert was sworn immediately after the other and in turn gave an oral exposition of his or her expert opinion with respect to the relevant issues arising from the evidence.
> - Each expert then in turn expressed his or her opinion about the opinions expressed by the other experts.
> - Counsel then cross-examined the experts, being at liberty to cross-examine on the basis (a) that questions could be put to each expert in the customary fashion (i.e. one after the other completing the cross-examination of one before proceeding to the next), or (b) that questions could be put to all or any of the experts, one after the other, in respect of a particular subject, then proceeding to the next subject. Re-examination [re-direct] was conducted on the same basis.
>
> In the result we gained assistance from the evidence of the experts. Their oral expositions and examinations occupied only three and one-half hours.[21]

Concurrent evidence sessions usually involve two to four experts, although they can be considerably larger. It is not uncommon to hold several concurrent-evidence sessions during a single proceeding, each featuring different types of experts. It is also not uncommon for experts from different fields to be joined in the determination of a single issue. The following examples are drawn from the Administrative Appeals Tribunal (AAT), a federal body responsible for merits reviews of administrative decisions. The case involved a challenge to the

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20. Peter Biscoe, Judge, Land & Env't Court of N.S.W., Address at the Australasian Conference of Planning and Environment Courts and Tribunals, Expert Witnesses: Recent Developments in New South Wales (Sept. 16, 2006), ¶ 15, *available at* http://www.lawlink.nsw.gov.au/lawlink/lec/ll_lec.nsf/vwFiles/Speech_16Sept06_BiscoeJ_Expert_Witness.doc/$file/Speech_16Sept06_BiscoeJ_Expert_Witness.doc (emphases added); *see also* Stockland Dev. Pty Ltd. v. Manly Council, No. 10428, 2004 WL 1926821 (N.S.W. Land & Env't Ct., Aug. 3, 2004); BGP Prop. Pty Ltd. v. Lake Macquarie City Council, (2004) 138 L.G.E.R.A. 237, 263.

21. Re Queensl. Indep. Wholesalers Ltd. (1995) 132 A.L.R. 225, 231–32.

determination of the geographical boundary for the Coonawarra, one of Australia's most prestigious wine regions. Experts in viticulture, horticulture, hydrology, and wine production comprised the first panel in the "hot tub." The second panel of experts likewise included viticulturists, but had as well experts in cartography, geography, and soil science.[22] Other panels were composed of historians and those with expertise in the marketing of wine.[23] The large number of experts and range of their specializations may not be entirely representative, but these examples provide some indication of how the concurrent evidence sessions can combine experts from a range of disparate, though contextually related, specializations.

Most of the concurrent-evidence sessions I have observed break down into two quite distinct parts. The first stage represents a major shift from conventional adversarial proceedings. During this stage, all of the experts are asked to comment, sometimes in very general terms, about the case, the issues, their opinions, and the differences between them. These comments can be protracted and are sometimes punctuated by questions from the lawyers, the judge, and even the other experts participating in the session. The questions, at least initially, tend to be of an elucidatory nature. Once each of the experts has explained her position, she usually supplements her initial testimony with comments on the opinions and testimony of the other experts. The judge, rather than the lawyers, often presides over this first stage. Sometimes the judge suggests topics and directs the experts to comment on legally relevant issues. It is common for judges to ask questions and not uncommon for them to ask lots of questions. At the end of this first stage (or sometimes at the end of the entire concurrent-evidence session), the experts are usually asked if there is anything they would like to add, qualify, or clarify.

The second stage of the concurrent-evidence session more closely resembles the conventional adversarial trial. Here, the lawyers reassert control by directing questions to the expert witnesses. Usually, there is little need for examination-in-chief and the lawyers begin by cross-examining the opposing experts in the usual order. The presence of several expert witnesses allows questions to be put to more than one witness, and witnesses can be asked to comment on the other experts' answers. During the second stage, because of the attempt to produce a less adversarial environment, the lawyers (usually barristers) are not always sure about their entitlement to vigorously cross-examine, and experts are sometimes uncertain about the extent of their constraint.

Variations in practice reflect not only institutional traditions and rules (or lack of rules) associated with the different courts and tribunals in which

22. Re Coonawarra Penola Wine Indus. Ass'n Inc., No. S2000/182, ¶¶ 61, 65 (Admin. App. Trib., Oct. 5, 2001), *available at* http://www.austlii.edu.au/au/cases/cth/AATA/2001.

23. *See* Gary Edmond, *Disorder with Law: Determining the Geographical Indication for the Coonawarra Wine Region*, 27 ADEL. L. REV. 59, 158–60 (2006) (documenting a contentious dispute over geographical boundaries and the application of scientific-expert evidence).

concurrent evidence is received, but also differences between cases, the predilections of judges and lawyers, as well as the number, type, and experience of experts. Depending on how concurrent-evidence sessions are operationalized, varying degrees of control are retained by lawyers or obtained by the experts and the judge (at the expense of the lawyers).

The introduction of concurrent evidence has been supplemented by a number of interrelated reforms.[24] The most significant of these reforms are the pretrial joint meeting (also known as a joint conference or conclave), which leads to the production of a joint report, and the imposition of a formal code of conduct.

Aspiring to make trials run more efficiently, many Australian courts now require experts from related fields to meet, preferably face-to-face and usually in the absence of lawyers, prior to the trial.

> Before giving evidence, experts of the same discipline confer and produce a joint report which sets out the matters on which they agree, the matters on which they disagree and their reasons for disagreement. This enables the Court to identify the differences which remain between them and which require resolution through their oral evidence.[25]

These meetings are intended to enable the experts to identify the extent of their agreement or disagreement, resolve or narrow differences, and reduce their respective positions to writing in the form of a joint report that they are required to endorse. This joint report, it is hoped, will help to procure settlement. Ordinarily, only the areas of disagreement will be "live" should the case proceed to trial.

During the joint conferences "an expert witness must exercise his or her *independent*, *professional judgment* . . . and must not act on any instruction or request to withhold or avoid agreement. An expert should not assume the role of advocate for any party during the course of discussions at the joint conference."[26] The expectation that experts will be independent and professional servants of the court (and justice) is longstanding.[27]

In Australia, these expectations are now formally elaborated in a related series of reforms. In the late 1990s, in response to Woolf's review and domestic concerns about the detrimental effects of bias, Australian judges began to impose codes of conduct on expert witnesses.[28] These codes represent an attempt to eradicate the partisan culture widely associated with expert witnessing. Now expert witnesses in most Australian jurisdictions are required

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24. Several Australian jurisdictions have embarked on more-fundamental reforms, which include encouraging parties to select a joint (or single) expert between them or risk the court appointing one. *See*, *e.g.*, Geoffrey Davies, *Current Issues—Expert Evidence: Court Appointed Experts*, 23 CIV. JUST. Q. 367 (2004) (describing disadvantages of the adversarial system).

25. Biscoe, *supra* note 20, ¶ 15; *see also* Uniform Civil Procedure Rules, 2005, § 31.26 (N.S.W.).

26. Uniform Civil Procedure Rules, 2005, § 31.23 (N.S.W.).

27. *See* TAL GOLAN, LAWS OF MEN AND LAWS OF NATURE: THE HISTORY OF SCIENTIFIC EXPERT TESTIMONY IN ENGLAND AND AMERICA 18–22 (2004).

28. *See*, *e.g.*, Federal Court Rules, Order 34 A.3 (Austl.).

to comply with a formal protocol and to sign a declaration to that effect in every case. These codes explicitly and unambiguously emphasize that "an expert witness is not an advocate for a party."[29] Rather, an "expert witness's paramount duty is to the court and not to any party in the proceedings."[30] In addition, the codes require expert witnesses to work cooperatively; "endeavor to reach agreement"; list facts and assumptions on which their opinions are based; identify any literature, materials, "examinations, tests, or other investigations" relied upon; specify any limitations of their opinions; and indicate if their opinion is inconclusive or requires further research or data.[31]

Although codes of conduct and formal declarations represent an attempt to regulate the performance of experts that predates the institutionalization of concurrent evidence, the codes are now used in conjunction with all procedures pertaining to expert witnesses. The duties emanating from the codes, along with the underlying model of expertise, are consistent with the expectations for conduct in pretrial meetings, the production of joint reports, and the concurrent-evidence sessions.

IV

MARKETING "HOT TUBS"

The basic concurrent-evidence technique emerged out of experiments in the 1970s.[32] Since that time, with the support of judges like Lockhart, Lindgren, and Heerey, this technique was used intermittently in tribunals and very occasionally in the Federal Court of Australia.[33] The institutionalization of concurrent evidence, however, is a far more recent development.[34] In the last five years, concurrent-evidence procedures have been formally adopted in the Federal Court, the Administrative Appeals Tribunal, the Supreme Courts of New South Wales and the Australian Capital Territory,[35] and the Land and Environment Court of New South Wales; it has also been used selectively in the superior courts of New Zealand.[36]

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29. FEDERAL COURT OF AUSTRALIA, PRACTICE DIRECTION: GUIDELINES FOR EXPERT WITNESSES IN PROCEEDINGS IN THE FEDERAL COURT OF AUSTRALIA (2008), *available at* http://www.fedcourt.gov.au/how/prac_direction.html#current.

30. Uniform Civil Procedure Rules, 2005, § 3.13 (N.S.W.).

31. *Id.* at Schedule 7, § 31.23. These were derived from English cases, such as: Ikerian Reefer, [1995] 1 A.C. 455; R v. Harris, [2005] 1 A.C. 5; R v. B, [2006] 2 A.C. 3.

32. *See*, *e.g.*, Re Queensl. Indep. Wholesalers Ltd. (1995) 132 A.L.R. 225, 231–32.

33. *See*, *e.g.*, Re Rosenthal and Repatriation Comm'n, No. N2000/378, 2002 WL 31256991 (Admin. App. Trib., Oct. 9, 2002).

34. *See, e.g.*, Federal Court Rules, Order 34A.3 (Austl.); Uniform Civil Procedure Rules, 2005, § 31.35 (N.S.W); Supreme Court Rules, 2006, (Austl. Cap. Terr.).

35. *Id.*

36. Prominent case law examples include Alphapharm Pty Ltd. v. H. Lundbeck A/S, No. 1120, 2008 WL 1891368, ¶ 58 (Austl., Apr. 24, 2008); Int'l Fund for Animal Welfare (Austl.) Pty Ltd. v. Minister for Env't and Heritage (2006) 93 A.L.D. 625, ¶¶ 43–45 (Admin. App. Trib.); Walker Co. v. Sydney Harbour Foreshore Auth., No. 30024, ¶¶ 1–13 (N.S.W. Land & Env't Ct., Apr. 19, 2004), *available at* http://www.austlii.edu.au/au/cases/nsw/NSWLEC/2004; Powerco Ltd. v. Commerce

The institutionalization of concurrent evidence has been accompanied by a publicity campaign dominated by senior members of the Australian judiciary (also described as "proponents"). The extracts below present the major arguments advanced in support of the new procedures. The ability to comprehensively reproduce the primary justifications seems to outweigh the limited inconvenience of a little repetition.

> Experience shows that provided everyone understands the process at the outset, in particular that it is to be a structured discussion designed to inform the judge and not an argument between the experts and advocates, there is no difficulty in managing the hearing. Although I do not encourage it, very often the experts who will be sitting next to each other, normally in the jury box in the courtroom, end up referring to each other on first name terms. Within a short time of the discussion commencing, you can feel the release of the tension which normally infects the evidence gathering process. Those who might normally be shy or diffident are able to relax and contribute fully to the discussion.
>
> This change in procedure has met with overwhelming support from the experts and their professional organisations. They find that they are better able to communicate their opinions and, because they are not confined to answering the questions of the advocates, are able to more effectively respond to the views of the other expert or experts. They believe that there is less risk that their expertise will be distorted by the advocate's skill. It is also significantly more efficient. Evidence which may have required a number of days of examination in chief and cross-examination can now be taken in half or as little as 20% of the time which would have been necessary.
>
> As far as the decision-maker is concerned, my experience is that because of the opportunity to observe the experts in conversation with each other about the matter, together with the ability to ask and answer each others questions, the capacity of the judge to decide which expert to accept is greatly enhanced. Rather than have a person's expertise translated or coloured by the skill of the advocate, and as we know the impact of the advocate is sometimes significant, you actually have the expert's own views expressed in his or her own words.[37]
>
> Peter McClellan, Chief Judge at Common Law, Supreme Court of N.S.W.

> One assumption of the adversarial system is that argument between people (even heated argument) is the most satisfactory means of resolving a controversy. It accepts that parameters of the debate and the management of the process will be controlled by advocates for whom the intellectual integrity of the outcome is not imperative. Their concern is to advance the interests of the client. We accept this approach to resolving factual questions, which involve a challenge to a witness's recollection, credibility or reliability. We have, I suggest, without much thought, accepted the same approach to experts.
>
> One consequence of the adversarial system is that witnesses, including many experts, consciously or unconsciously perceive themselves to be on one side or the other of the argument. Apart from the inefficiencies involved, the process discourages many of the most qualified experts from giving evidence. It is commonplace to hear people who have much to offer the resolution of disputes—doctors, engineers, valuers, accountants and others—comment that they will not subject themselves to a process which is not efficient in using their time. It is equally common to be told that the

Comm'n, No. 2005 485 1066, ¶ 74 (N.Z., June 9, 2006), *available at* http://www.austlii.edu.au/nz/cases/NZHC/2006.

37. Peter McClellan, Chief Judge at Common Law, Supreme Court of N.S.W., Address at the LAWASIA Conference: Expert Witnesses—The Experience Of The Land & Environment Court Of New South Wales (Mar. 21, 2005), *available at* http://www.lawlink.nsw.gov.au/lawlink/lec/ll_lec.nsf/vwFiles/Speech_21Mar05_CJ.doc/$file/Speech_21Mar05_CJ.doc.

> person will not give evidence in a forum where the fundamental purpose of the participants is to win the argument rather than seek the truth. A process in which they perceive other experts to be telling "half truths" and which confines them to answering only "the questions asked" depriving them of the opportunity, as they see it, to accurately inform the court is rejected as "game playing" and a waste of their time.[38]
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> Peter McClellan, Chief Judge at Common Law, Supreme Court of N.S.W.

> In my experience, the Hot Tub procedure brings a number of benefits which include the following. First, the experts give evidence at a time when the critical issues have been refined and the area of real dispute narrowed to the bare minimum. Secondly, the judge sees the opposing experts together and does not have to compare a witness giving evidence now with the half-remembered evidence of another expert given perhaps some weeks previously and based on assumptions which may have been destroyed or substantially qualified in the meantime. Thirdly, the physical removal of the witness from his party's camp into the proximity of a (usually) respected professional colleague tends to reduce the level of partisanship. Fourthly, the procedure can save a lot of hearing time.[39]
>
> Peter Heerey, Judge of the Federal Court of Australia

> Concurrent evidence can have a number of virtues over the traditional process:
>
> 1. The evidence on one topic is all given at the same time.
> 2. The process refines the issues to those that are essential.
> 3. Because the experts are confronting one another, they are much less likely to act adversarially.
> 4. A narrowing and refining of areas of agreement and disagreement is achieved before cross-examination.
> 5. Cross-examination takes place in the presence of all the experts so that they can immediately be asked to comment on answers of colleagues.[40]
>
> Garry Downes, Judge of the Federal Court of Australia and President of the AAT

> Requiring all evidence to be given concurrently reduced the importance of cross-examination by lawyers and increased the importance of questions designed to elicit the common ground, the areas of divergence and the reasons for divergence.[41]
>
> Brian Preston, Chief Judge of the Land and Environment Court of N.S.W.

According to these judges, concurrent evidence transforms the agonistic adversarial trial into a more cooperative enterprise in which scientific attitudes and values are afforded opportunities to manifest and flourish. The main benefits attributed to concurrent evidence (and associated procedural reforms) might be summarized as follows:

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38. Peter McClellan, Chief Judge at Common Law, Supreme Court of N.S.W., Address at the Industrial Relations Commission of New South Wales Annual Conference: Expert Evidence—Aces Up Your Sleeve (Oct. 20, 2006), *available at* http://www.lawlink.nsw.gov.au/lawlink/supreme_court/ll_sc.nsf/pages/SCO_mcclellan 201006.

39. Peter Heerey, *Recent Australian Developments*, 23 CIV. JUST. Q. 386, 391 (2004).

40. Garry Downes, Judge of the Fed. Court of Austl., Address at the Inter-Pacific Bar Association Conference: The Use of Expert Witnesses In Court and International Arbitration Processes (May 3, 2006), *available at* http://www.aat.gov.au/SpeechesPapersAndResearch/speeches/downes/UseExpert WitnessesMay2006.htm.

41. Brian Preston, Chief Judge of the Land & Env't Court of N.S.W., Address Before the Australian Environmental Business Network: Ongoing Reforms of Practice and Procedure (June 16, 2006), *available at* http://www.lawlink.nsw.gov.au/lawlink/lec/ll_lec.nsf/vwFiles/Paper_14Jun06_Preston_Reforms.doc/$file/Paper_14Jun06_Preston_Reforms.doc.

Virtues	Textual support / Footnote[42]
Concurrent evidence embodies the scientific ethos: it provides a discursive, cooperative environment and facilitates peer review.	19, 20, 36, 37, 38, 39, 40
Experts like concurrent evidence.	36, 37
Concurrent evidence reduces partisanship (i.e., "adversarial bias").	36, 37, 38, 39
Concurrent evidence enhances communication, comprehension, and decisionmaking.	19, 20, 36, 38, 39, 40
Concurrent evidence reduces the influence of the lawyers.	36, 40
Concurrent evidence saves time, money, and institutional resources.	20, 24, 36, 37, 38, 39

V

MORE CRITICAL REFLECTIONS

Now we can start to turn up the heat on the "hot tub" and reconsider some of the assumptions and advantages used to justify its introduction and use. Although many of these issues require further empirical investigation, some observations based on contributions from historians and sociologists, along with the responses of those who have participated in concurrent-evidence sessions, can contribute to the fire.

A. The Scientific Ethos?

Proponents contend that, unlike conventional adversarial procedures, concurrent evidence embodies the values of science or allows the scientific ethos to more readily surface.[43] Codes of conduct, pretrial meetings (without lawyers), and concurrent-evidence sessions are credited with facilitating a cooperative "discussion," which allows the experts to assist the court in reaching a decision more effectively. Settlement and resolution are more readily facilitated because the proximity of peers provides a powerful disciplining

42. "Textual support" refers to extracts reproduced throughout this article and AUSTL. LAW REFORM COMM'N, *Review of The Adversarial System of Litigation: Issues Paper 24*, 7.10 (1998), *available at* http://www.austlii.edu.au/au/other/alrc/publications/issues/24/ALRCIP24.html; *see also* AUSTL. LAW REFORM COMM'N, MANAGING JUSTICE: A REVIEW OF THE FEDERAL JUSTICE SYSTEM (REPORT 89) (2000); ADMIN. APPEALS TRIBUNAL, AN EVALUATION OF THE USE OF CONCURRENT EVIDENCE IN THE ADMINISTRATIVE APPEALS TRIBUNAL (2005).

43. See sources supporting "Virtue 1" in Table, asserting that concurrent evidence embodies the scientific ethos. *See, e.g.*, McClellan, *supra* notes 37–38.

influence.[44] Further, experts may prefer concurrent evidence because of the familiar, cooperative approach to resolving disagreement and uncertainty. Proponents, appealing to scientific norms and the efficacy of peer participation, suggest that concurrent evidence provides a means of securing less-partisan and less-extreme expert advice.[45] Unfortunately, these justifications are predicated upon romanticized images of expertise and expert disagreement.[46] Thus, it is useful to make a few remarks about judicial appeals to the "ethos of science" and peer review.

The sociologist Robert Merton offered an early and highly influential account of scientific norms and their social functions. His work suggested that norms like "universalism," "communism," "disinterestedness," and "organized skepticism" were central to scientific activity.[47] Lacking Merton's sociological and historical sophistication, modern reformers routinely (and unwittingly) promote elements of his sociology—developed in response to the rise of fascism in the 1930s—as some kind of timeless prescription for all authentic scientific activity.[48] This not only caricatures Merton's work on the normative structure of science but removes his scholarship from its historical context. To the extent that Australian legal reforms are based, even loosely, around such normative constructs, they trivialize both modern sociological endeavors and, more importantly, changes to scientific and biomedical practice.

More recent sociological investigation suggests that the norms described by Merton are unlikely to guide scientific practice or assessments of scientific knowledge. Appealing as norms may be, they are not prescriptive, and in many contexts they are open to inconsistent, though potentially legitimate, interpretations.[49] Norms such as "disinterestedness," "communalism," and "organized skepticism" encounter more fundamental difficulties when considered in the context of changes to the organization and funding of scientific and biomedical research in the post-war era. The growth of pharmaceutical companies and the rise of biotech start-ups—in response to

44. *Id.*

45. See sources supporting "Virtue 3" in Table, *supra* p. 160, asserting that concurrent evidence reduces partisanship.

46. *See* Gary Edmond, *Judicial Representations of Expert Evidence*, 63 MOD. L. REV. 216 (2000) (examining inconsistencies in the way scientific evidence is represented in legal proceedings and judgments); *see also* DAVID CAUDILL & LEWIS LARUE, NO MAGIC WAND: THE IDEALIZATION OF SCIENCE IN THE LAW 49, 54–55 (2006) (noting the loose boundaries between social factors and scientific inquiry and practice).

47. *See* MERTON, *supra* note 1, at 266–78. "Communalism" and "communality" are often substituted for "communism."

48. *See, e.g.*, McClellan, *supra* note 38.

49. *See* Michael Mulkay, *Norms and Ideology in Science*, 15 SOC. SCI. INFO. 637–56 (1976) (discussing the roles of norms in scientific activity); Michael Mulkay, *Interpretation and the Use of Rules: The Case of Norms of Science*, *in* SCIENCE AND SOCIAL STRUCTURE: A FESTSCHRIFT FOR ROBERT K. MERTON 111 (Tom Gieryn ed., 1980) (discussing the important role of normative principles on scientific discourse and practice).

technological breakthroughs, changes to intellectual-property regimes, and the availability of private capital—are good examples.[50]

Many of the practical limitations with the normative ethos were explored through empirical investigation. One study, conducted in the early 1970s, concluded that NASA scientists routinely contravened Mertonian-style norms.[51] Derogations from these norms were so pervasive that the investigator, Ian Mitroff, developed the idea of the "counter-norm."[52] Mitroff found that his NASA subjects accounted for their scientific activities using a variety of explanatory resources. When their behavior seemed to contravene popular expectations—such as the norms described by Merton—scientists simply appealed to a range of exceptions and qualifications that helped to legitimize (or excuse) what might otherwise have been considered aberrant (or even deviant). It was these principled derogations that were characterized as counter-norms.[53] Of interest, Mitroff noticed that departures from norms such as "disinterestedness" and "communalism" did not necessarily correlate with poor standing or a lack of credibility.[54] Some of the most eminent and successful scientists—based on the standing of their research and institutional affiliations—were secretive, resented criticism, and adhered to "pet" theories in the face of adverse evidence. A corollary was that knowledge derived through secret, noncooperative, and interested activities was not necessarily understood as pathological or unreliable. These findings are consistent with subsequent investigations.[55]

There are also difficulties with judicial appeals to "organized skepticism" in the guise of peer review. Proponents suggest that the proximity of colleagues will discipline and constrain expert performances, particularly the incidence of partisanship and adversarial bias.[56] There are good reasons, however, for believing that peer participation will be less effective than proponents imply. After all, extensive sociological and biomedical literatures question the value and efficacy of scientific peer review.[57]

Without delving into this vast literature, one illuminating issue merits discussion. While U.S. judges are searching for "reliability" through method

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50. *See generally* PHILIP MIROWSKI, THE EFFORTLESS ECONOMY OF SCIENCE (2004) (discussing the influence of economics on scientific practice); HELGA NOWOTNY, PETER SCOTT & MICHAEL GIBBONS, RE-THINKING SCIENCE (2001) (arguing for a fundamental reexamination of the distinction between society and science).

51. IAN MITROFF, THE SUBJECTIVE SIDE OF SCIENCE 85–88 (1974) (examining the role of subjective factors in scientific research).

52. *Id*. at 77.

53. *Id*.

54. *Id*. at 73–79.

55. *See, e.g.*, HARRY COLLINS, GRAVITY'S SHADOW (2004) (sociological history of the decades-long search for evidence of gravitational waves).

56. *See, e.g.*, Heerey, *supra* note 39.

57. Pervasive assumptions about the efficacy of peer review and publication are critically appraised in Gary Edmond, *Judging the Scientific and Medical Literature: Some Legal Implications of Changes to Biomedical Research and Publication*, 28 OXFORD J. LEGAL STUD. 523, 523–31 (2008).

discourses (for example, testing), general acceptance, publication, and peer review, and while English and Australian judges are endeavoring to reduce adversarial bias through procedural reforms, increasing the proximity of experts, and facilitating a "discussion," the world's leading biomedical journals have resorted to more legalistic solutions to help them assess the value of contributions (that is, research papers submitted for publication). Rather than expose submissions to further peer review or place greater emphasis on formal adherence to method doctrines, members of the International Committee of Medical Journal Editors, for example, require information about conflicts of interest, commercial sponsorship, and the identity of all contributors, and they now mandate the prospective registration of clinical trials to help them identify—if not eliminate—forms of bias.[58] These pragmatic responses to the impact of commercial sponsorship, by well-resourced biomedical journals with technically competent staffs, serve to highlight how the power attributed to scientific norms and the proximity of peers is not only exaggerated but unlikely to help judges reliably assess expert disagreement.

More prosaically, in conventional adversarial proceedings expert advisers and expert witnesses often sit in the courtroom monitoring testimony. These "opposing" experts have access to expert reports and transcripts. Is it realistic to think that the concurrent participation of these experts—effectively moving them a few yards in the courtroom and allowing them to respond during the same session rather than a day or a week later—will produce a demonstrable change in behavior?

Australian judges, concerned about the behavior of experts, seem to be intent on reducing adversarial bias through the provision of a space—in the adversarial trial and pretrial processes—that is shaped by scientific, rather than legal, conventions. To the extent that the new procedures have conflated idealized norms of science with actual scientific practice, this response might be imprudent. Proponents of concurrent evidence seem to believe that temporarily marginalizing the lawyers and facilitating a "discussion" in the midst of an adversarial process will overcome the influence of expert selection and the experts' sensitivity to the parties' causes of action, and, most remarkably, enable the experts to somehow transcend theoretical and professional commitments, as well as personal limitations.

B. Partisanship and Adversarial Bias

When it comes to assessing expert evidence, "partisanship" and "adversarial bias" are not particularly precise or analytically reliable concepts. They tend to be used selectively to privilege (or discount) particular experts and opinions.

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58. INT'L COMM. OF MED. JOURNAL EDITORS, UNIFORM REQUIREMENTS FOR MANUSCRIPTS SUBMITTED TO BIOMEDICAL JOURNALS: WRITING AND EDITING FOR BIOMEDICAL PUBLICATION § II.D (2005). The ICMJE is a group of medical-journal editors, which includes participants from, among others, *The New England Journal of Medicine*, the *Journal of the American Medical Association*, the *British Medical Journal*, and the *Lancet*.

All experts are (and expertise is) more or less aligned, subjective, interested, biased, and dependent. These alignments, interests, and limitations may assume a great variety of forms—be they theoretical, professional, institutional, financial, or personal. Whether (the appearance of) "bias," "interests," or "sponsorship" affects the reliability of expert evidence is a fundamental but complex issue.[59] Although judges and fact finders should seek information about influences and biases, unfortunately this information will not always expedite resolution or simplify decisionmaking.[60]

Procedural reforms based around "objectivity" and "impartiality" offer limited hope for improving the reception and treatment of expert evidence.[61] Not only do these concepts have limited analytical utility, but there is little evidence to suggest that adversarial bias is deliberate or consistently detrimental to civil practice. Although experts selected by the different parties may well take on aspects of a case, based *in part* on their contractual relationship, these experts will often be selected because they already adhere to particular assumptions and commitments or employ methodologies considered valuable. Even if not conspicuously or predictably aligned, experts (including court-appointed experts) do not enter disputes without professional, institutional, and ideological "baggage."[62] Expert selection may be far more important than any pressures or importunity brought about by adversarial alignment and interactions with parties and their lawyers.

These observations have serious implications for concurrent evidence, and for the utility of codes of conduct and expert declarations. Without a reliable means of identifying deliberate partisanship—as opposed to genuinely held beliefs and opinions—and its impact on expert evidence, codes of conduct become abstract formulations with primarily symbolic value. Codes of conduct affirm the role of the expert as a servant of the court but fail to explain what that might mean to an expert with theoretical commitments, professional prejudices, particular visions of social justice, and a range of subsidiary obligations.

Moreover, if partisanship is prevalent, then its persistence might be a consequence of the difficulty of appearing impartial along with a widespread realization that judges have practical problems disciplining partisan experts. Without more-sophisticated models of expertise, on what grounds are judges to

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59. Steven Yearley, *The Relationship Between Epistemological and Sociological Cognitive Interests*, 13 STUD. HIST. &. PHIL. SCI. 353, 375 (1982). *See generally* Steve Woolgar, *Interests and Explanation in the Social Study of Science*, 11 SOC. STUD. SCI. 365 (1981) (explaining the difficulties of using interests as explanatory resources).

60. Kenneth Rothman, *Conflict Of Interest: The New McCarthyism in Science*, 269 J. AM. MED. ASS'N 2782, 2783 (1993) (a critical response to calls for full disclosure of conflicts of interest in biomedical research).

61. For an account of the socially contingent nature of "objectivity," see generally LORRAINE DASTON & PETER GALISON, OBJECTIVITY (2007).

62. *See* Laura Hooper, Joe Cecil & Thomas Willging, *Assessing Causation in Breast Implant Litigation: The Role of Science Panels*, 64 LAW & CONTEMP. PROBS. 139, 151–54 (Autumn 2001) (describing problems with a court-appointed expert panel in large-scale litigation over breast implants).

apply sanctions against experts who breach their "duty" to the court or who are unable to achieve consensus around their opinions? How should judges determine whether reluctance to agree or to narrow the grounds of disagreement at a joint meeting or in a "hot tub" constitutes legitimate professional differences, or obduracy driven by a party's desire for success at trial? Do judges possess the technical abilities to distinguish between willful breaches as opposed to genuine adherence to idiosyncratic views? When is adherence to a particular "school of thought" partisan and under what circumstances might it be reasonable or objective? What can judges do when experts hold firm opinions in areas widely accepted as uncertain or disagree about the extent of consensus in a field (or even the relevance of the field)? The recent reforms tell us little about possible sanctions for breaches of duties, or how such breaches might be ascertained and proved.[63]

Even if claims about the prevalence of partisanship were not empirically justified, judicial recourse to problems created by "adversarial bias" and "junk science" might nevertheless be comprehensible. Institutional and professional benefits may accrue from the perpetuation of alarm about expert performances, especially the prevalence of bias and departure from the scientific ethos, in contexts where judges have to routinely resolve expert disagreement and explain their reasons for preferring one expert opinion to another.

C. Enhancing Communication and Comprehension

Claims for concurrent evidence are less controversial when restricted to improving communication and judicial comprehension. Disregarding questions about partisanship, evidentiary reliability, and the realities of scientific practice, it would seem difficult to challenge the contention that concurrent evidence has the potential to improve communication and enhance comprehension in court—especially if its use dramatically reduces the volume of expert testimony. If nothing else, concurrent-evidence procedures require the experts to meet and talk, they enable expert witnesses to give longer explanations using their own words, they encourage experts to comment directly on the testimony of others, and they provide a forum where judges are less restricted in their questioning of witnesses and enable fact finders to observe the interactions between experts.[64]

Provided concurrent evidence retains provision for vigorous cross-examination, even if the witnesses are no longer quite as restrained or servile, then it should help to improve communication and comprehension in the trial and on appeal.[65] There are, however, no guarantees that concurrent evidence

63. Though longstanding, judicial concerns about expert partisanship have produced few disciplinary responses. *See, e.g.*, Lord Abinger v. Ashton, (1873) 17 Ch. D. 358, 374 (noting biases of paid experts).

64. *See generally* MISUNDERSTANDING SCIENCE (Alan Irwin & Brian Wynne eds., 1996) (discussion of socially contingent approaches to expert knowledge).

65. *See* SHEILA JASANOFF, SCIENCE AT THE BAR: LAW, SCIENCE AND TECHNOLOGY IN AMERICA 200–216 (1995) (sociological account of the complex relations between law and science).

will narrow disagreement, encourage cooperation, increase settlement, or render decisionmaking easier, less controversial, or more accurate.

D. Out of Sight, Out of Mind?

Lawyers may lose some control over expert witnesses during the pretrial processes and in the more discursive openings of concurrent evidence. Means of retaining influence and predictability may, nevertheless, be at hand. Procedural efforts to reduce the ability of lawyers to influence expert evidence may actually have effects elsewhere in the process, such as in the choice of experts. If lawyers are excluded from pretrial meetings and marginalized during parts of the trial, then, in order to maintain some semblance of control and predictability, it will become increasingly important to select experts who understand what they need to do in the interests of the case while maintaining professional credibility before the legal institution.

The introduction of concurrent evidence may encourage lawyers to select experts who are unlikely to make damaging concessions or to be maneuvered into compromising concessions by the experts retained by other parties. Many lawyers will be reluctant to cede control to experts unless they are confident that *their* experts understand the tacit rules of the game. Over time it may become even more important to select experts whose contribution to any open "discussion" is predictable and effective. Marginalizing lawyers may actually encourage the use of more-experienced expert witnesses. Ironically, the litigation specialists who seemed to irritate Lord Woolf may be the kind of experts that enable lawyers to maintain most control over pretrial proceedings and the evidence. These experts will be neither swayed nor exposed by codes of conduct.

The reforms also make the production of the joint report particularly important. The need to complete joint reports with attention to detail seems to be an emerging feature of practice. Meeting and completing a binding (practically if not always technically) joint report adds to the costs of the pretrial processes. And, because agreement between the experts will tend to constrain the parties, in practice lawyers will ordinarily have a clear idea of what their expert will say, and there will be considerable pressure on the expert to adhere to the terms of the original advice (or report) or a position consistent with the client's cause of action.

One further implication—which involves crediting experts with agency—is that pretrial meetings provide experts with new opportunities and incentives to manage their participation. Proponents, drawing upon normatively charged visions of expertise and committed to institutional efficiencies, seem to think this is desirable.[66] In so doing they tend to overlook the shared professional interests maintained by groups of experts, such as three neurosurgeons, meeting

66. *See, e.g.*, McClellan, *supra* notes 37–38.

beyond the surveillance of the lawyers and judge.[67] There are, of course, alternative ways to interpret expert consensus. By agreeing on a joint report, experts can dispose of suits, limit their exposure to cross-examination, and still receive substantial compensation for their pretrial activity. To some extent experts may be able to manage the scope of professional liability and even keep some disputes in-house. Away from the pressures of the courtroom and the gaze of the lawyers, experts are empowered to negotiate the terms and limits of the factual dispute. Once opposing experts strike agreement it will be difficult to explore the covert realm of expert negotiations or to reopen settled "facts."

E. Resource Implications and Logistics

In some circumstances, concurrent evidence will reduce the amount of time required of expert witnesses and may clarify, or even resolve, the issues and areas of residual disagreement. Unfortunately, at present there are no ready means to determine which cases will produce these savings or how "quicker" and more "cost effective" justice should be assessed against more-refractory values such as fairness, accuracy, or institutional legitimacy.[68] The only guides currently available are institutional presumptions qualified by issues of proportionality, procedural fairness, convenience, and personal preference.

Concurrent evidence might well reduce costs in large-scale litigation in which many experts are scheduled to testify. Compelling two, but especially more, experts to testify simultaneously will often reduce the length of a trial by allowing them to each give an answer to the same question and to merely endorse or qualify the opinions of other experts. Also, the lawyers do not have to reintroduce the various issues or the opinions of other experts over and over. In some cases, though, having experts provide evidence concurrently will increase the time they spend in court while reducing the overall length and cost of the proceedings, themselves.

When experts achieve consensus on substantial issues during the pretrial stages, more cases may be settled or abandoned. Generally though, the effects of concurrent evidence and pretrial meetings on settlement are unclear. The parties will often have solicited expert assistance before the joint meetings. So, if settlement occurs after these meetings, it will often be more expensive for the parties (if not for the court). If lawyers select more-predictable and intractable experts to compensate for their displacement from the pretrial phases, then it may prove more difficult to narrow the issues or to settle.

A further difficulty arises from the physical layout of Australian courtrooms. Tribunals and most courts are designed to allow a single witness to

67. *See* CAROL JONES, EXPERT WITNESSES: SCIENCE, MEDICINE AND THE PRACTICE OF LAW 165–193 (1994) (socio-legal account of the role of experts in legal processes in England).

68. Admin. Appeals Tribunal, *supra* note 42, §§ 2.1, 2.28, 6.2; *see also* King v. Military Rehab. and Comp. Comm'n (2005) 83 A.L.D. 322, ¶ 22 (Admin. App. Trib.); Flintstones Garden Supplies Centres v. Greater Geelong CC, P1775/2006, ¶¶ 41–42 (Admin Trib. (Vict.), Apr. 19, 2007), *available at* http://www.austlii.edu.au/au/cases/vic/VCAT/2007.

testify, usually from a dedicated witness box. When it comes to concurrent evidence, fitting more than two expert witnesses and the many exhibits and reports associated with expert testimony in these booths is often problematic. Some courts place the experts in the jury box. However, many tribunals and courts have neither jury seats nor even much space for the public. In response, they have improvised, bringing in additional chairs and tables and, in the very smallest courts, seating the expert witnesses at the bar table opposite the lawyers. If concurrent evidence is to continue, then there would seem to be a need to design courts with space for a panel of expert witnesses.

Another logistical difficulty emerges from the potential disorderliness of the "discussion." The chorus of different participants, in conjunction with the free-form structure, makes it difficult for anyone trying to record or transcribe the session to reliably identify speakers.

F. Judicial Independence, Procedural Fairness, and Criminal Justice

Concurrent evidence requires oversight and tends to encourage judicial intervention. It disrupts the adversarial trial and requires the judge to enable the experts to speak and comment on each other's opinions without too much interference from the lawyers. The judge is also encouraged to ask questions. Allowing judges to become more active makes sense from the perspective of communication and comprehension, but increased participation may simultaneously raise concerns about judicial impartiality and procedural fairness within adversarial systems, particularly regarding criminal trials.[69]

Many aspects of concurrent evidence have yet to be considered on appeal. Of particular concern are issues of procedural fairness (due process) and perceptions of fairness arising from the way concurrent evidence is implemented.[70] A range of issues create potential problems: How should judges identify suitable cases? How should judges handle different levels of experience and confidence among the experts? How similar do the types of expertise have to be before the session becomes intellectually suspect? What should a judge do when an affluent party calls several experts against an impecunious litigant with one or even none? Should the length and vigor of cross-examination be limited? What should judges do when lawyers object to experts making long speeches during the first or second stage? What happens if an expert refuses to be constrained in their answers, appealing to their "paramount duty" to the court? If concurrent evidence makes a trial or the preparation for a trial more expensive in a particular case, is it reasonable or fair to expect a party to bear the additional cost? What happens when experts disagree about what was actually said during the pretrial meetings or are unable to sensibly negotiate?

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69. *See* Marvin Frankel, *The Search for Truth: An Umpireal View*, 123 U. PA. L. REV. 1031, 1033–35 (1975) (noting the perspective and limitations of judges in the adversarial system's explication of truth).

70. *See* TOM TYLER, WHY PEOPLE OBEY THE LAW 115–57 (2006) (exploring the public perceptions of law and legal procedure).

Parties and their advocates may also argue about when a concurrent-evidence session should be held.[71] Concurrent evidence disrupts the adversarial trial because it breaks the continuity of the cases developed by the respective parties. Concurrent evidence may change the dynamics of adversarial litigation in some jurisdictions. Unavoidably, concurrent evidence introduces a range of new strategic decisions.

These issues might not prove insurmountable. Judges and legal institutions, however, may be vulnerable if parties challenge concurrent evidence (and its related procedural developments). We have yet to see what appellate courts will make of concurrent evidence in the absence of much empirical evidence about costs, speed, veracity of outcomes, or public satisfaction.

Lurking in the background of the recent reforms to civil procedure are the implications for criminal justice and, in Australia, the jury. In 2001, a senior judge in New South Wales proposed the cautious extension of pretrial joint conferences to criminal proceedings. Although Justice Wood recognized that "it is not always the case that the defense can assemble a team of forensic experts of equivalent experience and expertise to those who work full time for forensic science laboratories or police services," he nevertheless commended pretrial conferences.[72] Wood even provided an example of the advantages: "[D]oubts entertained by a defense expert may be dispelled by the additional information or explanation provided in a joint conference, allowing the accused more comfortably to offer an early plea of guilty, and thereby receive the benefit of the discounting attaching to that circumstance."[73]

The disparity in the resources and experts available to the state provides one reason for resisting the wholesale extension of pretrial conferences and concurrent evidence to criminal proceedings.[74] Additional concerns arise from the presumption of innocence and the burden of proof. Is it appropriate or desirable, in adversarial proceedings, to require the defense experts to meet with the state's forensic scientists and consultants prior to trial? Should the defense be obliged to reveal its "hand" or disclose weaknesses in the prosecution case if such notice will allow the state to repair or change its expert evidence? There is also a danger that experts, testifying in the more free-form, concurrent-evidence session, might inadvertently disclose inadmissible or highly prejudicial information.

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71. *See* Uniform Civil Procedure Rules, 2005, § 31.35 (N.S.W.) (listing possibilities for the presentation of expert evidence).

72. James Wood, Chief Judge at Common Law, Supreme Court of N.S.W., Address at the 8th Greek Australian International Legal & Medical Conference: Expert Witnesses: The New Era (June 2001), *available at* http://www.lawlink.nsw.gov.au/lawlink/supreme_court/ll_sc.nsf/pages/SCO_speech_wood_010601.

73. *Id.*

74. *See generally* Michael Saks & Jonathan Koehler, *The Coming Paradigm Shift in Forensic Identification Science*, 309 SCIENCE 892 (2005) (explaining how many longstanding forensic science techniques have not been empirically tested).

VI

EMPIRICAL EVIDENCE FROM EMERGING PRACTICES

Some of the emerging responses to concurrent evidence merit consideration. It might not come as a surprise to find that the experiences and impressions of lawyers, experts, and a wider selection of judges and commissioners, present more variegated impressions than those of the proponents.

A. Case Lore

Representations of concurrent evidence in published decisions are generally positive. The most familiar refrains among the growing number of Australian decisions documenting the use of concurrent evidence (and "hot tubbing") refer to the assistance obtained by the fact finder and to the savings in time and, implicitly, resources. Comments by the Tribunal in *Ironbridge Holdings Pty Ltd. and WA Planning Commission* are typical:

> The experts are to be commended for having participated in this process in a professional and diligent manner. While significant professional disagreement remained between them, their endeavours enabled the Tribunal to quickly grasp complex issues of traffic engineering involving a number of variables. Had this evidence been received in the way in which it is in most courts and tribunals, it is likely to have taken a week or more. In contrast, the concurrent evidence in the Tribunal took less than a day.[75]

Similarly, the use of case-management techniques and concurrent evidence in *Uniting Church Homes, Inc. and City of Stirling* meant that the "final hearing which might well have occupied up to two weeks, took the equivalent of one hearing day."[76] Taken at face value, the selective use of concurrent evidence seems to have the potential to radically reduce hearing times.

In other reported decisions, concurrent evidence is linked to cooperative interactions, concessions, and even agreement. Consider *Gangemi and the Shire of Margaret River*:

> [D]uring the course of the hearing, [two experts] were requested to confer with each other to determine the extent to which they agreed as to matters of land capability, and to identify the issues in respect of which they disagreed. They were then called together, and gave concurrent evidence. As it happened, the process of consultation ultimately gave rise to agreement of all issues of land capability, and [the experts] together prepared a plan depicting the different areas of productive agricultural land within the lot. Counsel for both sides were *extremely co-operative* in this process *and can take much credit for its success*. The process led to a far more effective resolution of the matter the subject of the witness's expertise than might have been expected by the traditional process of tender of reports and cross examination of each of the witnesses at length on those reports.[77]

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75. Ironbridge Holdings Pty Ltd. and WA Planning Comm'n, DR 345, ¶ 44 (Admin. Trib. (W. Austl.), Nov. 28, 2007), *available at* http://www.austlii.edu.au/au/cases/wa/WASAT/2007.

76. Uniting Church Homes Inc. and City of Stirling, RD 6, ¶ 31 (Admin. Trib. (W. Austl.), Aug. 19, 2005), *available at* http://www.austlii.edu.au/au/cases/wa/WASAT/2005.

77. Gangemi and Shire of Augusta-Margaret River, RD 126, ¶ 26 (Admin. Trib. (W. Austl.), June 2, 2005), *available at* http://www.austlii.edu.au/au/cases/wa/WASAT/2005 (emphases added); *see also* Brescia v. QBE, No. 50082/05, LEXIS BC200705312, ¶¶ 160–61 (N.S.W., July 6, 2007); Gumana v. N.

In cases like *Gangemi*, when counsel and experts are "extremely cooperative," it may be that concurrent evidence will help to narrow or resolve the dispute. Indeed, in some types of litigation—such as in a planning jurisdiction (for example, the Land and Environment Court of New South Wales) where there is considerable scope for creativity, discretion, and cooperative compromise—pretrial meetings and concurrent evidence might be especially helpful. One should, however, be careful equating collegiality, cooperation, and consensus with the absence of partisanship or inferring that expert agreement or compromise produces accurate or reliable evidence. The kinds of compromises that can be negotiated between town planners or geographers in relation to the size of a building or the uses of land, for example, might not be appropriate in professional negligence proceedings or between forensic scientists in criminal matters.

Notwithstanding its apparent successes, concurrent evidence does not invariably save time or help to clarify, or even narrow, areas of disagreement. It certainly does not guarantee concurrence, compromise, or even civility. In *Perpetual Trustees Victoria Ltd. v. Ford*, Justice Harrison explained that the concurrent evidence served "to highlight the absence of any likelihood of agreement between [the expert witnesses] on important issues" and "degenerated . . . into an interdisciplinary brawl."[78] In *Jetset Properties v. Eurobodalla Shire Council*, the proximity of the experts did not generate concessions, compromise, or moderation.[79] In that case, the proximity of peers seemed to exert little influence, at all:

> The opinions of the two sets of experts were far apart. They relied on different methodologies, used different data and reached different conclusions. Each believed that the methodology and data used by the other was useless. I detected no hint of recognition on either side of the professional competence of the other.[80]

In *Synergy Environmental Planning v. Cessnock City Council (No. 2)*, the experts could not even agree on what was said during the pretrial meetings.[81] "In this case, the evidence during the hearing showed that the experts, who could not even reach agreement on a true record of their joint conferences, remain far apart on technical matters, necessitating a Court decision on the facts and merits of those issues."[82] In *Morrison and Repatriation Commission*, the applicant relied upon the assistance of an expert witness who had limited familiarity with the medical specialization deemed relevant to the case.[83]

Terr. (2005) 141 F.C.R. 457, ¶ 173; Winters v. Att'y Gen. of N.S.W., No. 40730/07, 2008 WL 715461, ¶ 167 (N.S.W. Ct. App., Mar. 18, 2008).

78. Perpetual Tr. Vict. Ltd. v. Ford, No. 15045, 2008 WL 278422, ¶ 43 (N.S.W., Feb. 1, 2008).

79. Jetset Prop. v. Eurobodalla Shire Council, No. 10685, ¶ 42 (N.S.W. Land & Env't Ct., May 9, 2007), *available at* http://www.austlii.edu.au/au/cases/nsw/NSWLEC/2007.

80. *Id.*

81. Synergy Envtl. Planning v. Cessnock City Council (No. 2), No. 11353, ¶ 9 (N.S.W. Land & Env't Ct., Mar. 21, 2005), *available at* http://www.austlii.edu.au/au/cases/nsw/NSWLEC/2005.

82. *Id.*

83. Morrison and Repatriation Comm'n, No. N2005/47 (Admin. App. Trib., Aug. 2, 2006), *available at* http://www.austlii.edu.au/au/cases/cth/AATA/2006.

According to the Commission's decision, this seemed to create confusion and complexity that was not reduced by concurrent evidence.[84]

Trial judges have also encountered resistance to the use of concurrent evidence when the stakes are large and new procedures introduce uncertainty and risk. In "mega-litigation" over the rights to televise Australian Rules Football, a federal judge encouraged the parties to use concurrent evidence to "reduce the areas of disagreement and limit the hearing time required for exploring the remaining differences."[85] This proposal was "strenuously resisted by the Respondents"[86] and, to the limited extent it was used, did not prevent one of the experts from displaying "a tendency to argue the case on behalf of Telstra [a respondent], rather than confine herself to her area of expertise" despite the presence of other experts.[87]

Nor can one be confident that concurrent evidence will ease decisionmaking. Even when the process is orderly and constructive, the decisionmaker is required to weigh "the differing opinions." At the hearing in *Rezk and Australian Postal Corporation* the experts gave their evidence concurrently: "Neither expert compromised on [his] initial diagnosis. . . . The concurrent evidence clarified some elements of the different diagnosis but still left the tribunal with the task of resolving the differing opinions."[88]

Finally, in *Halverson v. Dobler*, a professional-negligence action, the concurrent evidence sessions were publicly valorized.[89] The main question at trial was whether the failure to perform an electrocardiogram was negligent and causally linked to the catastrophic brain injuries suffered by the plaintiff. The presiding judge, Peter McClellan, the leading proponent of concurrent evidence, thought the concurrent-evidence sessions proceeded in a "highly productive and efficient" manner.

> Each cardiologist prepared at least one written report and they met prior to giving their evidence in order to refine the issues falling within their areas of experience. They gave evidence concurrently, [one expert] participating by way of video link. This process proved both *highly productive and efficient* and has been of great benefit to me in resolving this case. The discussion was sustained at a high level of objectivity by all participants, each of whom displayed a genuine endeavour to assist the court to resolve the problems. The fact that ultimately they disagreed on critical issues was not

84. *Id.*

85. Seven Network Ltd. v. News Ltd., No. 1223, 2007 WL 2137775, ¶ 23 (Austl., July 27, 2007).

86. *Id.* ¶ 25.

87. Seven Network Ltd. v. News Ltd. (2007) 151 F.C.R. 450, ¶ 14.

88. Rezk and Austl. Postal Co., No. N2002/1720, 2005 WL 165614, ¶¶ 49, 51 (Admin. App. Trib., Jan. 18, 2005); *see also* Reardon and Repatriation Comm'n, No. N2002/1115 ¶ 30 (Admin. App. Trib., June 26, 2003), *available at* http://www.austlii.edu.au/au/cases/cth/AATA/2003/ (stating that experts' individual positions did not change as a result of the concurrent-evidence approach). *Contra* Gibbins and Austl. Postal Co., No. N2002/1655, 2003 WL 22073351, ¶ 69 (Admin. App. Trib., July 31, 2003) (noting experts' courtesy and professionalism).

89. Halverson v. Dobler, No. 20182/03, LEXIS BC200609964, ¶¶ 17, 104, 145 (N.S.W., Dec. 1, 2006); *see also* Wilson v. Tier, No. 20622/2001, LEXIS BC200800781, ¶ 119 (N.S.W., Feb. 22, 2008) (transcript from the concurrent-evidence session is reproduced in the judgment).

> due to anything other than a genuine difference of opinion about the appropriate conclusion to be drawn from the known facts.[90]

Halverson, perhaps, represents the apogee of concurrent evidence. McClellan is a senior judge with considerable experience using the technique. It might not be surprising, therefore, to find that concurrent evidence generally works well in his court. This does, however, raise an important point for the extension of concurrent evidence (and law-reform initiatives more generally). How do the new procedures work in situations with less-accomplished, less-experienced, and less-enthusiastic judges and commissioners? Although the emerging case law provides a partial answer, it might not be appropriate to evaluate concurrent evidence according to particular cases or to extrapolate from the impressions and experiences of undoubtedly able, but perhaps not entirely representative, judges.

Halverson, however, is also interesting for other reasons. The case demonstrates how the decisionmaker used conventional models of science for assessing witnesses and rationalizing the decision. Consider, for example, the summary of the concurrent evidence of the general practitioners:

> There were significant differences between the responses of the general practitioners to some critical questions . . . . Although all of the doctors brought a useful perspective to the various problems to my mind Dr Mackey's evidence was of the greatest assistance. . . . I was also impressed by Dr Bunker, who was prepared to make reasonable and appropriate concessions which tended to qualify his primary position. This was not always the case with Drs. Ford and Walsh.[91]

Considerations such as willingness to make concessions, clarity of opinion, reasonableness, relevant experience, and the ability to quickly and credibly respond to alternative perspectives may help judges to choose between divergent opinions. They can be used to attribute "objectivity" to specific cardiologists and privilege particular performances—like those of Dr. Mackey and Dr. Bunker—but they do not necessarily address the bases for holding opinions: the reliability of the opinions, assumptions, and underlying facts, the relevance of the expertise, the representativeness of the experts, or the extent of support in authoritative literatures.

Overall, when concurrent evidence works, its success seems to be limited to reducing the length of the trial and possibly to helping the decisionmaker understand the expert evidence. The case law tells us little, though, about partisanship, objectivity, the proper rate of concessions, or the deleterious effects of adversarial bias.

B. Listening to Lawyers and Experts

Limitations with the civil-procedural reforms, and some of the strained relations with adversarial justice, emerge more clearly from the experiences of lawyers (barristers and solicitors) and expert witnesses. The following

90. *Halverson*, LEXIS BC200609964, ¶ 101 (emphasis added).
91. *Id*. ¶¶ 67–68.

perspectives, which do not require much explanation, were selected because they introduce ambivalence and provide insights conspicuously absent from the judicial encomium. They are extracted from dozens of semi-structured interviews, discussions, and months of court observation conducted during 2007 and 2008.[92]

1. Interviews with Lawyers: Concurrent Evidence

"Concurrent evidence is . . . a bit like communism, good in theory but it doesn't work in practice." (*Solicitor*)

"If you've got more than two witnesses it just becomes hellish." (*Barrister*)

"The concurrent evidence deficiency, I see, is that people are thrown in the deep end and perhaps the force of the personality rather than the logic of the evidence is going to win the day." (*Barrister*)

"I think it leads to a less efficient and a less forceful presentation of evidence." (*Barrister*)

"Firstly . . . the ideal of them sitting in the witness box and having this discourse with each other never happens. . . . To the extent that they do talk to each other in the witness box it's usually, 'Have you got a pencil' rather than, 'I think you've got that wrong.' They don't cross-examine each other." (*Barrister*)

"If I want to examine, I will cross-examine in concurrent evidence even if some commissioners or judges think it's undesirable, because you are still entitled to test that person's evidence." (*Barrister*)

"The judges miss being barristers half the time because cross-examination is the best part of the job and so they sit up on the bench and have a bit of a go." (*Barrister*)

2. Interviews with Lawyers: Pretrial Meetings and Joint Reports

"Joint meetings [are] probably honest and good." (*Barrister*)

"Barristers [and judges] don't actually see all the shit that goes on before it gets to, you know [court] . . . they are sort of living in a slightly elevated stratosphere." (*Solicitor*)

It wasn't quick, it wasn't cheap, and it wasn't just. (*Solicitor*)

3. Interviews with Lawyers: Partisanship

"I'm not saying that there aren't some people out there who are hired guns but people knew who they were. The commissioners knew who they were and the judges knew who they were and nobody would pay any attention to them, and if you wanted to go to court and your client turned up with somebody who was one of those people, you would say "I'm not going to court with that expert because that expert is not somebody whose opinion is valued." (*Barrister*)

"This whole idea that people make up their mind because of the check that they're getting is offensive." (*Barrister*)

92. The author conducted more than fifty formal interviews with experts, lawyers, judges, and court workers in N.S.W.

"Credibility is the main thing I'm looking for. You don't want an advocate for your case. . . . You want . . . someone who is going to give an opinion that can be relied upon." (*Barrister*)

"I never really found there were hired guns." (*Barrister*)

"I think the judiciary gets overly concerned about trying to find an expert that doesn't exist." (*Barrister*)

4. Interviews with Lawyers: Other

[On the procedural reforms] "[I]t's wrong if it's solely directed to save court time and expense. I think that's a sad reflection on justice if we have to have to have systems imposed on us simply to save time and money." (*Barrister*)

"Judges want to initially appear progressive and they want to come up with rules that speed things up. I would be in favour of judges that come up with rules that slow things down. Because it might be a truism to say that justice delayed is justice denied, but it's certainly true that to say that cases that are rushed through are not doing the ends of justice much of a favour either." (*Barrister*)

"My experience and the experience of all my fellow practitioners is that it doesn't save costs." (*Barrister*)

"They want it to be just quick and cheap, not 'just, quick, and cheap.' . . . Justice requires that the parties feel they've had a fair hearing." (*Solicitor*)

5. Interviews with Expert Witnesses: Concurrent Evidence

"In a lot of cases it's unpredictable as to how it's going to go. . . . The questions, the issues that arise, the ability to cross-examine."

"[E]xperts, you would hope, know more about the issues than the barristers or the judge. So if you're allowed to ask some questions of the other experts then you might bring something out that no one otherwise will bring out."

"It does give you a bit more of an opportunity to talk, only when the, generally when the commissioner asks. . . . In my case, anyway, it's very rare that I would unilaterally offer some information."

"I don't think your client's case is best served by pillorying the other expert. . . . I don't think it's appropriate to challenge the beliefs of the other expert."

"Cross-examination should come back into it."

6. Interviews with Expert Witnesses: Pretrial Meetings and Joint Reports

"I think they are incredibly important to the whole process. . . . I find it astounding. Every time I go into a joint conference I say 'I'll write it.' And the other person says 'I'm happy for you to write it and you send it to me and I'll put in my comments.' That sounds just mind-blowing to me because you take control of the whole process."

"[I]f you've had a joint meeting one of you has to produce a document, a document's produced and by a large each of the parties are able to add something else in which they wish to emphasise. Where it gets difficult is if a person makes a particular point and the person makes an edit and the other person responds to it . . . . It's endless."

"The system now is not perfect by any stretch of the imagination. Because some times I've been involved in joint conferencing with other experts who have raised issues that even the solicitors haven't raised and wanted to raise issues that no one else had raised

at all. I kept saying you can't do that. You can't raise issues that aren't being raised. And, they'd just ignore me."

"Totally dependent on the attitudes of the participants."

"It's hideous, it's absolutely hideous."

7. Interviews with Expert Witnesses: Partisanship

"Give me the material and I will tell you whether or not I can support your case . . . . And quite often the advice will be, 'No, I can't support your case.' . . . That process of saying up front whether I can or can't support your case means that I'm not getting instructions saying you've got to say this or say that."

"Clearly my role is to express my views and to test the views of the other person. So, both of us are being impartial but we're representing views that we genuinely hold which align with the views of our respective clients."

"Certainly, when you act for a party, and they're present, and you know you're being paid, you feel a little bit more heat to give the evidence that you've prepared."

"I don't ever want to be taking anything on [so] that I end up thinking that 'I wish I wasn't here.'"

8. Interviews with Expert Witnesses: Other

"I think some of the other reforms, particularly the focus now on time, is just that it's a focus on a measure of efficiency, because its measurable, rather than a measure of quality."

"There's been a move towards focusing on dispensing with things quickly which has not necessarily created quality outcomes and better decisions."

"Well that, of course, is the process that the court's been going through. It's been reducing the time spent in court, it's been reducing its own costs, but the costs I think tend to be higher external to the court . . . . So, I mean the court ought to be looking at both sides of the coin not just one. . . . It's all very well to improve the system but you've got to improve it in a way that's going to benefit all the parties not simply one."

"[M]y experience with my clients is that while the cost to the court may seem to have decreased, the cost to my clients has increased by one hundred and fifty per cent."

C. Overview

These perspectives introduce complexity. The case law and empirical research suggests that experience with concurrent evidence is, in reality, quite varied. The responses of other judges, lawyers, and experts are not altogether negative, but they do not consistently align with the claims made by proponents. These perspectives, in conjunction with discussions and court observations, enable some generalization.

On average, lawyers tend to dislike the concurrent-evidence procedures, especially the idiosyncratic ways in which they are implemented by the various institutions and individual judges. As *Seven Network Ltd. v. News Ltd.*[93] suggests, to the extent that they introduce or accentuate uncertainty, new rules

93. (2007) 151 F.C.R. 450 (Austl.).

and procedures tend to be unwelcome. That these reforms were twinned—temporally and ideologically—with substantial revisions to tort law served to heighten the misgivings of many legal practitioners.[94] Even though lawyers tended to dislike these reforms to civil procedure, those lawyers most familiar with concurrent evidence were not always the most critical. Criticism could also be divided according to the division of legal labor. Solicitors were more inclined to criticize reforms to pretrial processes and barristers to speak against changes to the adversarial character of the trial.

Experts, on the other hand, were generally favorably disposed toward concurrent evidence, though they tended to be a little more ambivalent about the pretrial joint conferences. They doubted their ability to substantially reduce disagreement or reach agreement, in or out of court. Nor did they frame their interactions with other experts in terms of partisanship or idealized norms. Rather, recognizing that there could be genuine disagreement, several suggested that opposing experts were sometimes incompetent and unprofessional. Interestingly, these experts favored concurrent evidence because it afforded an opportunity to express their views and the potential to make opposing experts publicly accountable for their purported incompetence. Alternatively, some expert witnesses, as the extracts reveal, were reluctant to speak unilaterally, let alone express skepticism about the opinions of opposing experts.

These findings, along with the discussion in Section V, suggest that the conventional models of science and expertise underpinning the rationalization of concurrent evidence and pretrial meetings seem to be misconceived and misleading.

VII

CONCLUSION: A USEFUL TOOL WITH LIMITED POTENTIAL

Concurrent evidence is not a panacea for partisanship, adversarial bias, or the difficulties created by expert disagreement and decisionmaking in the face of uncertainty. Even when experts and lawyers cooperate and the procedures reduce the length of proceedings, concurrent evidence can leave the fact finder with a messy transcript and conflicting reports, and it can require more pretrial activity and impose higher costs on the parties. Nevertheless, concurrent evidence is not necessarily a bad thing. The procedure has the potential to improve communication and comprehension and the conditions under which lay fact finders make decisions about the evidence before them. The marketing of the recent reforms, closely linked to the invocation of inappropriate models of expertise, along with a general disinterest in empirical evidence about the domestic litigation landscape and the value of the recent reforms, are of concern. Notably, there seems to be little evidence to support the contention

94. *See, e.g.*, Civil Liability Act, 2002 (N.S.W.).

that concurrent evidence "tends to reduce the level of partisanship."[95] On the whole, the potential of concurrent evidence seems to have been exaggerated.

The disjuncture between the models of science motivating the public rationalization and implementation of concurrent evidence on the one hand, and what we know about science and expertise on the other, is rather stark. The Australian reforms seem to be predicated on antiquated and tendentious, if pervasive, ideas about scientific conventions.[96] The specter of Merton's norms haunts the Australian reform agenda, just as the ghost of Karl Popper manifested in the judicial necromancy associated with *Daubert*.[97] It might come as a surprise to some judges, but communalism, collegiality, disinterestedness, and skeptical attitudes do not seem to be prerequisites for contemporary scientific activity.[98]

Sociologically, the origins of the Australian reforms are interesting because the proponents, it seems, are the main beneficiaries. Under the auspices of producing more impartial expertise, improving access to justice, and improving in-court communications, Australian judges have unilaterally devised and imposed procedures *intended* to encourage settlement, reduce the number of issues ventilated in the courtroom, reduce costs, and render (judicial) decisionmaking easier. The reforms move interactions between experts from the courtroom to private pretrial spheres. They also impose new burdens on the experts, lawyers, and parties. Most significantly, the reforms give trial judges unprecedented control over expert evidence and consolidate judicial influence over the early stages of proceedings. There is no evidence, and apparently limited interest, in the question of whether the procedural reforms have improved access to justice.

We might question the desirability of law reform, emerging fully formed, from the apex of the dispute pyramid. One expert wondered, "Why don't they [the judges] engage with other people before they produce them [the civil procedural reforms]? It just doesn't make sense. . . . Why would you do that without consultation?" There are good reasons, as this article has endeavored to explain, why law reform should not be a top-down process and should not be dominated by judges. There should have been far more consultation with interested groups. Wider engagement might have helped proponents to recognize some of the weaknesses and limitations with the new procedures. It

95. Heerey, *supra* note 39, at 391.

96. *See* Mike Michael, *Lay Discourses of Science: Science-In-General, Science-In-Particular, and Self*, 17 SCI. TECH. & HUM. VALUES 313, 313 (1992) (exploring the influence of social institutions and norms on the public's understanding of science).

97. *See* Gary Edmond & David Mercer, *Conjectures and Exhumations: Citations of History, Philosophy and Sociology of Science in U.S. Federal Courts*, 14 LAW & LITERATURE 309 (2002) (discussing the use of literature from the history, philosophy, and sociology of science in federal jurisprudence before and after *Daubert*).

98. *See* STEVEN YEARLEY, MAKING SENSE OF SCIENCE: UNDERSTANDING THE SOCIAL STUDY OF SCIENCE (2005); HANDBOOK OF SCIENCE AND TECHNOLOGY STUDIES (Sheila Jasanoff et al. eds., 1995).

might have led proponents to wonder why so much of the reform agenda has been directed toward experts rather than lawyers and judges.

Approaching civil-procedural reform from the narrow perspective of concern about expert partisanship and institutional efficiency tends to marginalize important dimensions of social justice. Does it make sense, for example, to impose new procedures based on concerns about adversarial bias when large civil defendants can simply send their legally acculturated consultants (or employees) to any pretrial conference? More fundamentally, focusing on local incidents of partisanship detracts from macroscopic social and policy considerations such as the commercialization of biomedical research, regulatory capture, the lack of publicly funded health research, questions about who should bear the risk when profitable new products are marketed, and what these should mean for tort and product-liability law, practice, and reform.[99]

At this point I want to reiterate an important, if controversial, claim. In the absence of much empirical information or legal theorizing about expert partisanship and bias, it is possible that they do not present particularly serious problems in most civil matters. One of the major advantages with free proof is that, apart from enhancing satisfaction with the legal system, it keeps the issue of partisanship in focus. Adversarial procedures—which include scope for vigorous cross-examination—constantly remind us of the limitations of expertise; the intractable nature of expert disagreement; the prevalence of alignments, commitments, and interests; and other potential biasing factors. Expert disagreement creates problems primarily because there are no simple means of resolving disagreement in socially legitimate ways. Attributions of bias (and objectivity and impartiality) are unlikely to produce bright lines for understanding or assessing particular proffers of expert evidence. They are of limited value in determining the reliability of expert-opinion evidence or the authenticity of disagreement and, without more, do not present constructive bases for law reform.

For those who believe in the possibility of obtaining unbiased expertise, the failure to obtain genuine expert evidence, along with the appearance of bias, may represent very serious threats to legal institutions and social order. However, more-theoretically and empirically plausible models of expertise make simplistic models of bias (and, implicitly, objectivity and impartiality) both less tenable and less threatening. Once we realize that strong forms of objectivity are not attainable, we can begin to craft more-principled models of expertise that are *adequate* for forensic purposes. Inevitably, there will be ongoing debates about the meaning of adequacy, appropriate standards for

99. *See* Margaret Berger, *Upsetting the Balance Between Adverse Interests: The Impact of the Supreme Court's Trilogy on Expert Testimony in Toxic Tort Litigation*, 64 LAW & CONTEMP. PROBS. 289, 291 (Spring/Summer 2001) (noting the ability of federal district courts to use the *Daubert* trilogy to shape procedural and substantive law of toxic-tort litigation); CARL CRANOR, TOXIC TORTS: SCIENCE, LAW AND THE POSSIBILITY OF JUSTICE (2006) (a critical assessment of judicial responses to scientific evidence in toxic-tort litigation).

admissibility, who should bear the burden of proof, the technical competence of fact finders, and the extent to which rules and procedures should be uniform across different legal domains.

At its most modest, concurrent evidence has the potential to improve communication and comprehension in the courtroom. Concurrent evidence *may* reduce costs, encourage settlement, and expedite legal proceedings, and the presence of opposing experts *may* exert some discipline on witnesses. Pretrial meetings *may* help to identify the main areas of difference between the experts and reduce the time expert witnesses eventually spend in court. Simultaneously, its use may create difficulties and introduce new risks. Whether potential improvements in the provision and reception of testimony outweigh hurdles and dangers is a question that probably depends on the circumstances of individual cases, the proclivities of the participants, and the way in which different legal systems value rights, efficiency, fairness, accuracy, public confidence, and empirical evidence.[100]

Recent Australian reforms reveal much about legal conventions generally. Legal models of science and expertise tend to be simplistic and highly idealized. They tend to be invoked strategically in judgments and law reform to support the predilections and interests of judges. Like their counterparts in many common-law jurisdictions, Australian judges continue to believe that *genuine* expertise thrives just beyond the courtroom and the lawyer's office. For them, the problem has become how to configure rules of evidence and procedures to encourage genuine experts to produce trustworthy opinions in court.

Unfortunately there are few operational means for resolving expert disagreement, demarcating science from nonscience, or readily determining whether partisanship detrimentally affects the validity or reliability of particular expert opinions. That judges believe they can implement procedural solutions to these perennial epistemic difficulties is perhaps the most interesting aspect of recent developments in Anglo-Australian civil procedure.

100. *See* Sheila Jasanoff, *Law's Knowledge: Science for Justice in Legal Settings*, 95 AM. J. PUB. HEALTH (SUPPLEMENT 1) S49, S49–S58 (2005) (arguing that the *Daubert* trilogy misconstrues scientific practice and its relationship with the law).