



# Meetings between Experts: a route to shorter, fairer trials?

**Peter Sommer**

London School of Economics, Open University

[www.pmsommer.com](http://www.pmsommer.com)



# Routes to better quality expertise in the service of the courts...

- **Law Commission Consultation No 190: “Expert Evidence in Criminal Trials”**
  - A New Approach to the Determination of Evidentiary Reliability
- **Forensic Science Regulator**
  - New and improved quality standards for forensic science services
- **Assessment / Regulation of Forensic Science Practitioners / Experts**
  - Demise of CRFP
- **Within the existing Procedural Rules: Meetings between Experts**

# Conflicts ...

- **Expert evidence is to assist courts in areas beyond regular person-in-the-street knowledge**
- **Expert evidence must come from a recognised body of knowledge and be capable of testing by another expert**
- **Has to operate within an adversarial court procedure**

# Conflicts ...

- *Many legal rules and procedures were ostensibly designed to facilitate disputes about facts. Yet, certainly at common law, legal processes often seem to provide smoke-screens to conceal subjective judgements by persons with an interest in the outcome of proceedings*

Andrew Ligertwood, *in* Innovations in Evidence and Proof, ed Roberts & Redmayne, Hart Publishing, Oxford, 2007

# Expert Evidence

- **Bonython:**

- (1) “whether the subject matter of the opinion is such that a person without instruction or experience in the area of knowledge or human experience would be able to form a sound judgment on the matter without the assistance of a witness possessing special knowledge or experience in the area”;<sup>4</sup>
- (2) “whether the subject matter of the opinion forms part of a body of knowledge or experience which is sufficiently organized or recognized to be accepted as a reliable body of knowledge or experience, a special acquaintance with which by the witness would render his opinion of assistance to the court”;<sup>5</sup> and
- (3) “whether the witness has acquired by study or experience sufficient knowledge of the subject to render his opinion of value in resolving the issues before the court”.<sup>6</sup>

# Roles in Expert Evidence

- **Execution and reporting of a series of tests**
  - Unambiguous results
  - Evaluation of ambiguous results
- **Reconstruction of Events**
- **Opinion**
- **Background information**
  - Commercial, socio-cultural, technical, technological
- **(Case management assistance)**

# Conflicts ...

- **Expert addresses:**
  - The court, accurately but in terms it can understand
  - Lawyers who must examine and cross-examine
  - An opposing expert, so that they can test assumptions, methods, procedures, conclusions
- **But often there is only one report / statement**

# Can lead to...

## The battle of the experts:

- Skill in presentation
- Self-confidence
- Appearance
- Recital of Qualifications
- (Actual quality of expert work)
- (Relevance in case)

*How easy it for a court to use expert evidence well?*



**Is there a better way?**

# Alternative International Court Procedures for Expert Evidence

- Let the court decide
- Single Expert
- Judicial arbitration on expert evidence
  - “Code-based” jurisdictions
    - Investigating Judges
    - Inclusionary/Exclusionary Admissibility rules
  - US Daubert Rules
    - Judge as gatekeeper; *voir dire*; admissibility tests

# Let the court decide

- **Experts heard in order to suit normal adversarial procedure**
  - Gap in times when experts heard; areas of agreement / disagreement difficult to follow
  - Difficulties of fully testing experts within procedure
    - **Poor evidence too easily admitted**
    - **Inadequate cross-examination**
  - **“Theatrical” qualities**
    - **Skill in presentation**
    - **Self-confidence**
    - **Appearance**
    - **Recital of Qualifications**

# Single Expert

- **Easier in civil than in criminal**
  - CivPR 1 “over-riding objective”
  - In criminal: reputation and freedom of defendant at stake
  - SJE: but can lead to 3 experts rather than 2!
  - Roskill Fraud proposals: expert assessors
  - CrimPR 33.7 and 33.8
- **How do you choose your expert?**
  - And who does the choosing?
- **Who tests the expert?**
  - What if he is wrong, or not expert in the relevant area?

# Judicial Arbitration: US Approach:

- Judge acts as gate-keeper; evidence is inadmissible unless it is “generally scientifically acceptable” *Frye, 1923*
- Updated in *Daubert v. Merrell Dow Pharmaceuticals Inc 113 S.Ct. 2786 (1993)*; *Kumho Tire Company, Ltd et al v Patrick Carmichael, et al (Supreme Court, 1999)*

# US Approach:

## Daubert tests:

- whether the theory or technique can be (and has been) tested;
- the error rate associated with the method;
- publication in a peer-reviewed journal;
- whether the technique has gained widespread acceptance

# Daubert limits

- Test of general acceptability of scientific (and technical) evidence – protection against junk science
- Not a test of individual expert evidence:
  - Execution and reporting of a series of tests
  - Reconstruction of Events
  - Opinion
  - Background information
- High rate of change disciplines?

# Daubert / Law Commission / Forensic Science Regulator ?

- **Law Commission Consultation Paper No 190**
  - Admissibility tests, quasi-Daubert, exclusionary, exclusionary with discretion
- **Forensic Science Regulator**
  - Forensic Science Labs, not experts
  - ISO/IEC 17025:2005
    - **Validity and testing of methodologies**



**A tough test for this type of  
approach...  
Evidence from Computers**

## Some statistics about evidence from computers ...

- **70% of UK homes have at least one PC; many have several, including older PCs; 93% are connected via broadband**
- **97% of all businesses have broadband Internet connections; 70% have a website**
- **Cost of data media halves every 18 months**
- **Digital evidence is now normal and ubiquitous, not confined to a “hi-tech” ghetto**
  - **May be supportive, corroborative, indicative rather than central**

# Crimes

- **Hacking / Computer Misuse**
- **Child Sex Abuse**
- **Deception / Fraud**
  - Consumer, Business, Investment, Carousel, Phishing
- **Software, Games, Music Piracy**
- **Murder**
- **Terrorism**
- **Money Laundering**
- **Narcotics Importation / Distribution**
- **People Trafficking / Illegal Immigration**
- **Handling Stolen Goods**
- **Harassment**
- **Sexual assault**
- **Representation of the People Act**
- **Perjury**
- **Attempt to pervert course of justice**
- **Police Disciplinary Proceedings**

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# Usage

- to demonstrate the existence of and authenticate substantive documents, database records, emails and other files
- to recover deleted versions of the above
- to interpret configuration and logging files and date/time stamps on files to reconstruct events
- to interpret configuration and logging files to determine who had access to a computer at a particular time and hence infer authorship of particular activities
- to infer intent (including inferring common intent in conspiracy)
- in relation to CJA 2003 Part 11 Chapter 1 to find evidence of “bad character”

# Rate of Change ..

```
E:\>dir
Volume in drive E is IMAGE
Volume Serial Number is FE83-FD45

Directory of E:\

15/12/2005  21:01    <DIR>          booksmp3
05/11/2005  18:51         1,839,043,833 DVD_VIDEO_RECORDER.cdi
14/01/2007  09:44    <DIR>          FarmerDude
17/05/2006  14:17    <DIR>          Maps_v5
15/12/2005  21:01    <DIR>          MP3temp
13/12/2005  11:54    <DIR>          MP3_2
04/09/2006  16:31    <DIR>          Retell Recordings
               1 File(s)  1,839,043,833 bytes
               6 Dir(s)  119,086,022,656 bytes free

E:\>
```

MsDos 3: 1984  
MsDos 5: 1991

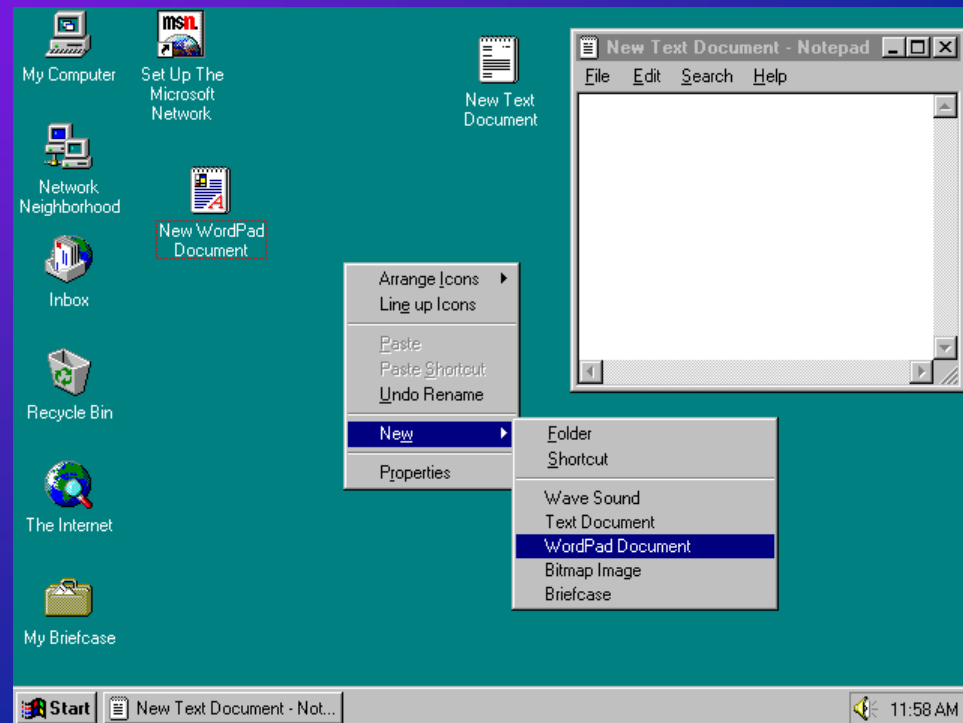
```
WordStar Professional Release 4
  O P E N I N G   M E N U
D open a document          L change logged drive/directory
N open a nondocument     C protect a file
P print a file             E rename a file
M merge print a file      O copy a file
I index a document        Y delete a file
T table of contents       F turn directory off
X exit WordStar           Esc shorthand
J help                    R run a DOS command

DIRECTORY  Drive D:\MS4
.5k ADDHEAD      .4k MEMO          .1k WSCONV.INI    1.5k WSINDEX.XCL
```



# Rate of Change ..

Windows 3.1: 1992



Windows 95: 1995

# Rate of Change ..



Windows 98: 1998  
Windows ME: 2000

Windows XP: 2001  
Windows XP SP2: 2004



# Rate of Change ..



**Windows Vista: 2007**



**Windows 7: 2009**



# Windows XP / Vista / 7

- **Changed folder locations**
- **New file and disk back-up facilities** (disk imaging plus “shadow copy”)
- **New means of recording date and time stamps**
- **In-built file indexing**
- **Drive encryption**
- **Email storage wholly changed**
- **Increased use of metadata or tags**
- **Changed thumbnails database, etc etc**

# Rates of Change: Social Structures

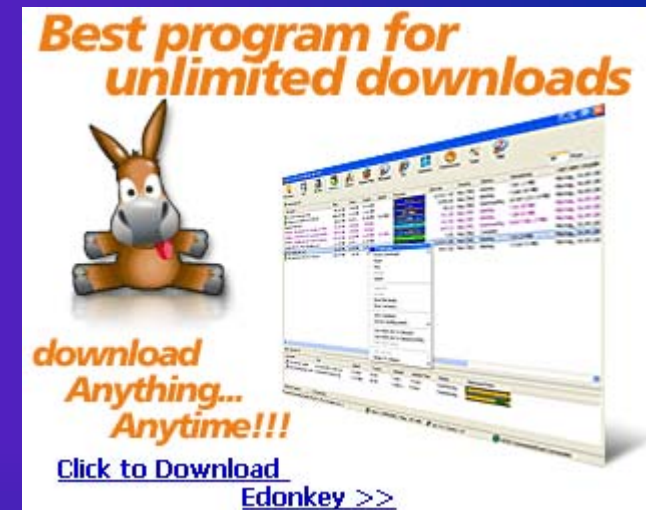
- **Bulletin Boards**
- **Email**
- **Newsgroups**
- **Mail List Servers**
- **Internet Relay Chat - IRC**
- **Commercial Online Communities** – CompuServe, AOL, Yahoo Groups
- **World Wide Web**
- **Commercial Chat**
- **Peer-to-Peer** – 3 + generations
- **Blogs**
- **Modern Online Communities** – MySpace, Bebo, etc

For each of these are specialist items of software; and forensic artefacts from which inferences can be drawn

# Rate of Change ..



# Rate of Change



# Rates of Change: Types of E-commerce

- Viewdata / Videotex / Prestel + phone call
- Web-sites + phone call
- Web-sites + email purchase
- Web-sites + use of 3<sup>rd</sup> party credit validation
- Web-sites + immediate fulfilment via credit card
- Internet-only payment schemes – PayPal etc
- Web-sites that track their customers and offer recommendations
- Web-based auction services

# Digital Forensics Methodology

- **Essentially: reverse engineering**
  - observe, formulate rule, design tool
- Create “clean” or “virgin” test environment
- Make forensic image
- Introduce changes to be observed
- Make further forensic image
- Look for all the changes
- Repeat until you can formulate a rule to describe what is happening
- Test rule
- (Publish)
- Develop tool
- Test tool

# Peer-reviewed Journals

- **Digital Investigation**
- **Internal Journal of Digital Evidence**
- **Journal of Computer Forensics**
- **International Journal of Forensic Computer Science**
- **Journal of Digital Forensic Practice**
- **Journal of Applied Digital Forensics and e-Discovery**

**But too few practitioners have time to write-up; some academics not very interested in forensic artefacts; publication lead times are long**

# Digital Forensics Analysis Suites

## Functions, Understandings

- **Media acquisition & verification – forensic imaging**
- **Disk Operating Systems**
  - To display directories, folders, dates, times; MBR, Partitions
  - Data Recovery
- **Data carving, filtering**
- **Internal Structures**
  - Registry
  - Info2
  - Cookies
  - History Folder / Temp Internet Files
  - LNKs
  - SWAP & Hibernation Files
  - Restore Points (XP)
  - Log Parsers
  - Email databases – DBX, PST etc etc
  - File formats



# Digital Forensics Analysis Suites

## Functions, Understandings

- Reports, Report Generation
- Exports, Extractions
- Virtualisation support

# Digital Forensics Analysis Suites

- **Frequency of Change**

- **AccessData FTK**



- **1.60: 30/03/2005; 1.61: 10/03/2006; 1.62: 01/08/2006; 1.70  
26/01/2007; 1.70.1 12/04/2007; 1.71: 27/06/2007; 1.72:  
18/04/2008; 1.80: 27/06/2008; 1.81: 30/09/2008; 1.81.2:  
21/01/2009**

# Digital Forensics Analysis Suites

- **Frequency of Change**

- **EnCase Forensic:**



- 3.20: 04/2002; 4.15: 10/2004; 5.05: 07/2006;
- 6.5.1: 30/05/2007; 6.6: 26/07/2007; 6.8: 13/11/2007; 6.8.1.: 15/12/2007; 6.10: 06/03/2008; 6.10.2: 06/04/2008; 6.11: 04/06/2008; 6.11.2: 04/07/2008; 6.12: 20/11/2008; 6.12.1: 08/01/2009; 6.13: 07/03/2009; 6.14: 14/07/2009
- **EnCase Scripts – who tests?**

**Changes too frequent  
and complex to test !**

# Forensic Computing

## Constant novelty:

- Forensic computing tracks all changes in technology – and social structures and conventions
- Insufficient time for usual cycle of peer-reviewed publication of new and tested forensic techniques and discoveries
- The greater the novelty, the greater the need for testability
- Funding for full research during an investigation may not be available

# **“Everything must be scientifically validated” Approach**

***What happens if there has been no publication in a peer-reviewed journal or other Daubert tests have failed?***

- **Do we let the suspect go free?**
- **But if not, how else do we test / protect the court from junk science?**

**Is there another way?**

# What courts do...

## Courts:

- Decide whether there is enough evidence to convict some-one of a specific criminal offence
- Resolve disputes between citizens on the basis of, eg
  - Breach of contract, duty, defamation, etc etc
- **Expert evidence is an *assistance* to this**
- **Science is concerned with general rules, courts with highly specific resolution**

# Law

## Scientific vs Legal Proof

- **Scientific Proof:** hypothesis, testing, absence of falsifying results >> produces “universal” explanation
- **Legal Proof is what juries accept** (or judges sitting alone accept as “fact”) >> produces decision in a dispute or in criminal proceedings
- **Fiction of Certainty:** courts have to reach a decision so as to give finality



# Meetings between Experts

# Expert Evidence

- **Criminal Procedure Rules: Part 33 – since November 2006**
- [http://www.dca.gov.uk/criminal/procrules\\_fin/contents/rules/part\\_33.htm#gems6301343](http://www.dca.gov.uk/criminal/procrules_fin/contents/rules/part_33.htm#gems6301343)

33.2

## Expert's duty to the court

- (1) An expert must help the court to achieve the overriding objective by giving objective, unbiased opinion on matters within his expertise.
- (2) This duty overrides any obligation to the person from whom he receives instructions or by whom he is paid.
- (3) This duty includes an obligation to inform all parties and the court if the expert's opinion changes from that contained in a report served as evidence or given in a statement under Part 24 or Part 29.

# Expert Evidence

## Content of expert's report

- (1)** An expert's report must -
- (a) give details of the expert's qualifications, relevant experience and accreditation;
  - (b) give details of any literature or other information which the expert has relied on in making the report;
  - (c) contain a statement setting out the substance of all facts given to the expert which are material to the opinions expressed in the report or upon which those opinions are based;
  - (d) make clear which of the facts stated in the report are within the expert's own knowledge;
  - (e) say who carried out any examination, measurement, test or experiment which the expert has used for the report and -
    - (i) give the qualifications, relevant experience and accreditation of that person,
    - (ii) say whether or not the examination, measurement, test or experiment was carried out under the expert's supervision, and
    - (iii) summarise the findings on which the expert relies;
  - (f) where there is a range of opinion on the matters dealt with in the report -
    - (i) summarise the range of opinion, and
    - (ii) give reasons for his own opinion;
  - (g) if the expert is not able to give his opinion without qualification, state the qualification;
  - (h) contain a summary of the conclusions reached;
    - (i) contain a statement that the expert understands his duty to the court, and has complied and will continue to comply with that duty; and
    - (j) contain the same declaration of truth as a witness statement.

# England: Meetings between Experts

## **CPR 33.6**

### **Pre-hearing discussion of expert evidence**

**This rule applies where more than one party wants to introduce expert evidence.**

**The court may direct the experts to –**

- **Discuss the expert issues in the proceedings; and**
- **Prepare a statement for the court of the matters on which they agree and disagree, giving their reasons.**
- **Except for that statement, the content of that discussion must not be referred to without the court's permission.**

# England: Meetings between Experts

- Rule that Expert's over-riding duty is to court, not client
- Useful to identify areas of agreement / disagreement in complex technical evidence – assist the jury – and judge
- Useful where a demonstration is to be shown in court – to limit confusion; the High Tech Court Room
- Testing of Tools, Findings

# England: Meetings between Experts: examples

- Agreement on how to explain a particular technology
- Agreement on an in-court demonstration
- Agreement on a glossary of terms
- Agreement on specific aspects
  - Disk correctly imaged
  - Specific files found at specific locations
- Defence seeking clarification of technical infrastructure at victim's premises
- Prosecution demonstration of methodology and/or tool to show validity / Mutual testing of artefacts to show there is a valid forensic argument

# England: Meetings between Experts: examples

- Agreement on chronology of events
  - Who did what, when.... ?
- Agreement on chronology of successive drafts of a document
- Method of decrypting
- Examination of Java in web-pages to test for “pop-up” defence
- Examination of Trojan / Virus defence

# Meetings between Experts

- **Australia: Concurrent Evidence - “Hot Tub”**
  - Evidence is heard from all experts in the same session in an informal procedure; experts are freed from the need at answer lawyers’ questions formally and can make presentations; there is usually an agenda but there can be a full *discussion*

Merton and the Hot Tub: Scientific Conventions and Expert Evidence in Australian Civil Procedure – Gary Edmond; <http://www.law.duke.edu/journals/lcp>.

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# Problems ...

- **Setting of parameters of meetings**
  - Who sets the agenda? Opposing lawyers may over-influence
  - Danger of respective arguments being prematurely revealed
- **Experts can usurp the role of the jury**
- **Opposing experts may be too friendly / too hostile**
- **Changes expert / instructing lawyer relationship**
  - Prosecution
  - Defence

# Problems ...

- **Timely PCMHs**
- **Lack of Training Courses**
  - Experts
  - Lawyers
  - Judges
- **Funding**
  - PCMHs poorly funded already
  - Will experts be funded for extra work / experience?
- **Assessing the Experts**
  - Puts renewed emphasis on quality of expert – who assesses?

# Conclusions

- **Meetings between experts have the potential to simplify and shorten trials without compromising the essentials of adversarial procedures**
- **But education, training and focussed funding are critical if new faults in the criminal justice system are to be avoided.**

# Lowering the Cost of Criminal Justice

- **It's a Criminal Justice *System*; actions in one part lead to consequences elsewhere**
- **Most activities of defence lawyers are essentially reactive**
  - Determined by police & CPS charging decisions – and Govt policy on new crimes
- **Poor quality CPS work shows up in the Criminal Defence budget**
- **PCMHS – the route to shorter, clearer trials**
- **Meetings between Experts offers one route forward**

# Lowering the Cost of Criminal Justice

- **Across-the-board cuts in Criminal Justice will not be productive**
- **Investment in CPS training, court systems, PCMHs, should produce savings in trial time**
  - With knock-on benefits to utilisation of courts, fees directly associated with trial, releasing police from hanging round courts, etc etc
- **Current attempts to improve expert evidence simply look at the quality of “forensic science”, not at the evaluation, interpretation and reconstruction roles of experts**



# Meetings between Experts: a route to shorter, fairer trials?

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