
BEHAVIOURAL EVIDENCE, EXPERT TESTIMONY, AND LEGAL PROCEDURE

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ABSTRACT

Offender profiling and behavioural evidence are extensively used in criminal investigation to develop potential hypotheses and to gain insight into offence patterns. Once this material crosses the threshold into the courtroom, it falls under different rules of admissibility, reliability, relevance and fairness in court. The article looks at the courts' approach to profiling expert evidence in the United States, the United Kingdom and India, and why it sometimes doesn't pass the legal muster. The core thesis of the argument is that the problem with behavioural profiling evidence in court is not the inherently antagonistic role of the court towards psychology, but rather the evidence often fails to meet the standards of evidentiary fairness, qualified help and methodological reliability. The article examines each of these failures in the light of *State v. Fortin*, *R v. Gilfoyle*, *R v. Dallagher*, *R v. Clark* and *Diaz v. United States*, and ultimately concludes with suggestions for the judicial evaluation of behavioural expert evidence.

Keywords: The keywords employed in the proposed this thesis are: behaviour evidence; offender profiling; expert testimony; admissibility of behaviour evidence; forensic evidence.

1. Context and Rationale

The FBI's Behavioral Science Unit popularized offender profiling in the 1970s and later (as cited by Turvey, 2012), when their records began to be documented. Since then, behavioural analysis is a widely used investigative technique in serious crime investigations. It is said that its practitioners are able to interpret at the crime scene, through the victim's input, modus operandi and post offence behaviour, the traits of the offenders: age, occupation, where they live, how they were feeling. The issue comes when these are taken into the courtroom. Investigation is a process of hypothesizing—it deals with possibilities, informed speculation. A court hears about particular claims against particular individuals, has to accept evidence, and is required to be certain that the evidence is relevant, reliable, fairly obtained, and not unduly prejudicial. In the United States, in the United Kingdom, in Canada, and in Australia, courts have expressed concerns about profiling-based expert testimony, not as a blanket objection to the use of psychology in court, but as a specific objection to the use of that type of testimony: the testimony has not been validated; the qualifications of the expert are inadequate; the expert testimony invades the ultimate issue; the prejudicial effect outweighs probative value; or the evidence has been offered on insufficient facts (Bosco et al., 2010; Kocsis, 2016).

This article looks at the principles employed by courts in evaluating expert behavioral evidence, explores the cases where courts failed to accept evidence, and offers insights for both investigators and courts.

2. Research Question and Aim

The primary research question is: what actually happens when courts evaluate the

behavioural evidence and profiling-based expert testimony and how, when challenged by admissibility, reliability, relevance, prejudice and procedural protections, can that evidence and expert evidence fail to meet standards? The goal is to show that, in law, evidential failure takes certain logical trajectories: through cases and legal doctrine. Three subsidiary questions frame the analysis: What legal tests does expert behavioural evidence need to meet; when does such evidence typically not meet those tests; and what should courts do to ensure that they don't inflict unreasonable injustice? The article is important because there is a common misconception that is the source of legal risks: between helping investigators and presenting it in court. Without proper gatekeeping, courts are allowing convictions based on unvalidated inference and not proof where the evidence is based on profiling.

3. Legal and Evidentiary Framework

3.1 Admissibility and Reliability in Evidence

The general rules governing expert evidence in the United States are found in FRE Rule 702, which mandates that expert testimony must rely on sufficient facts, use reliable methods and serve the function of assisting the trier of fact. The Daubert case from 1993 (*Daubert v. Merrell Dow Pharmaceuticals, Inc.*) makes the trial judge a formal gatekeeper, evaluating whether expert testimony has been tested, peer-reviewed, has a known error rate and has been generally accepted. The Court extended this gatekeeping in *Kumho Tire Co. v. Carmichael* (1999) to all technical and specialised knowledge, such as behavioural analysis. In England and Wales, Part 19 of the Criminal Procedure Rules 2015 requires experts to provide an objective opinion within their expertise, with their duty owed to the court. Evidence shall be relevant if it makes a fact of consequence more

or less likely (FRE Rule 401) but relevance is not enough; the evidence must also be methodologically reliable. Critics have argued that offender profiling fails to do so: that its predictions are unverifiable, that it has base-rate problems, and that there are inconsistent results of controlled studies on the accuracy of profiling (Canter, 2012; Bosco et al., 2010).

Prejudice and Probative Value, 3.2

When weighing evidence, FRE Rule 403 allows the exclusion of evidence that is “Substantially outweighed by the danger of unfair prejudice or of confusing the jury”. Behavioural profiles have a high element of prejudice risk: They talk about character, propensity and psychological type. If the expert’s opinion is presented solely as an opinion, without substantiation, and is presented by a jury that has been told the expert is an authority on the subject of criminal profiling, it is likely the expert will be heard without being challenged regarding this information. If a jury is presented with an expert opinion without any evidence of it, and that expert appears to give them information about the defendant’s motivation and what he knows, instead of information about what he knows from a fact-based inference, then the expert is likely to be accepted by the jury without challenge about the information.

3.3 Ultimate Issue and Mental State

Expert opinion as to the mental condition of the defendant that is an element of the crime is not admissible under FRE 704(b). Often, with behavioural evidence, the line is crossed. The Supreme Court ruled in *Diaz v. United States* (2024) that Rule 704(b) was not violated by the general population-based expert inference, as long as the expert does not make an opinion regarding the specific defendant’s mental state.

3.4 Indian Law: Section 39 of the Bharatiya Sakshya Adhiniyam, 2023

Under the Bharatiya Sakshya Adhiniyam, 2023 (BSA), expert evidence in India is regulated under Section 39, which is identical to Section 45 and 45A of the Evidence Act, 1872. When a court has to form an opinion on matters outside common knowledge then opinions of persons especially skilled in a relevant field are relevant, says Section 39. In *State of H.P. v. Jai Lal* (1999), the Supreme Court stated that expert opinions are not final and can be judged for their reliability and reliability. In *Ramesh Chandra Agrawal v. Regency Hospital Ltd.* (2009), the Court reiterated that expert evidence should be considered for reasons and fact and cannot be merely accepted. Evidence of the behavioural profile in an Indian court, however, would have to be expert qualified, properly supported, backed up by facts and serve as one piece of advice (and not proof).

4. Behavioural Evidence in Investigation and Court

Behavioural evidence is the evidence that is generated by the analysis of human behaviour, human patterns, human decision-making and/or human mental state as seen in crime-related behaviours. Staging analysis of a crime scene, linkage of an offence, post offence conduct analysis, geographic profiling, victim selection patterns and behavioural threat assessment. Offender profiling (also known as criminal investigative analysis) is a subset of which involves making inferences about offender characteristics from crime scene and offence data (Turvey, 2012; FBI Law Enforcement Bulletin, 2014). The FBI Law Enforcement Bulletin (2014) details its use for case prioritisation and interview strategy; Canter (2012) has devised geo-statistical methods to geographic profiling, and the College of Policing (2023) considers behavioural analysis to be a structured

investigative tool. In this context, behavioural evidence is: hypothesis forming and probabilistic. It is not proof; it's explicitly not proof.

The problem is from investigation to trial. An investigative hypothesis is a hypothesis that will guide the allocation of resources but is not legalistic in its reliability. Once the inference becomes part of the expert evidence it has been changed: the jury can now accept it as a fact or as an admission of guilt. This is the basic mistake of the courts.

Bosco et al. (2010) conducted a review of admissibility rulings in various jurisdictions and discovered that courts often reject profiling evidence for the same reasons: there is no empirical research behind its use, it is difficult to identify error rates, it is too much for an expert to handle, and the risk of prejudice. Kocsis (2016) points out that evidence from behavioural observation to character generalisation, from 'this offence was planned' to 'This defendant is a type of person who plans offences of this type' has been a particular concern of courts.

5. Expert Testimony: Duties, Limits and Admissibility

The primary duty of an expert witness, not to the court, but to the instructing party (CPR 2015, Part 19 Rule 19.2). They need to provide a view only if and within their own scope of competence, recognise the boundaries of that competence, rely on adequate identified facts and explain any uncertainty or doubt (Forensic science Regulator, 2019).

Qualification in one area of behavioural analysis does not transfer to another area; behavioural analysis is applicable to clinical psychology, forensic psychiatry, crime scene analysis, geographic profiling, and threat assessment. Evidence of qualifications based on experience, not formal qualifications, or from an expert who was more interested in prosecuting than assisting the court has been rejected by courts (Bosco et al., 2010).

The Daubert/Kumho Tire framework is tough in this case. It is the responsibility of a behavioural expert who states that a crime scene reveals “organised, controlled behaviour” to prove what training he/she has drawn on to make that statement, what methodology he/she used, whether he/she has tested it, what the error rate is, and whether he/she has had it peer-reviewed. Numerous profiling methods do not pass these tests, the FBI’s Crime Classification Manual, for example, has been criticized for its typological categories (organised versus disorganised) which have not been consistently empirically validated (Canter, 2012). The obligation to be within proper field directly leads from the evidence to reliable evidence to the opinion to the impermissible opinion and to the identification of the defendant as a problem of attribution to the problem of scene analysis.

6. Case Studies: Where Evidence of Behaviour and Expert Evidence Fails

6.1 State v. Fortin (New Jersey, 2000 and 2004): Behavioural Similarity as Propensity

In State v. Fortin, the prosecution used the testimony of the FBI profiler regarding similar behavior in two attacks to prove common perpetratorship (162 N.J. 517, 2000; 178 N.J. 540, 2004). The New Jersey Supreme Court voiced serious concern: If an expert testifies that the defendant’s behaviour is similar, the jury could merge the ‘these offences appear similar’ and this defendant is the kind of person to commit such offences elements of the FRE Rule 404(b) exception — which is propensity reasoning — into its final verdict. The court concluded that there was not enough rigor in the methodological foundation for the linkage. The lack of a validated technique and tool to differentiate between coincidental similarity and true behavioural signature were the apparent cause of failure.

Psychological Reconstruction Without Verifiable Foundation: 6.2 R v Gilfoyle (England,

1995/2000)

The psychological autopsy evidence—a behavioural reconstruction of the wife’s psychological state—in subsequent appeals after Eddie Gilfoyle’s murder conviction was much disputed (*R v Gilfoyle* [2000] 2 Cr App R 5). The Court of Appeal had a lot of reservations about its reliability as a way of determining whether somebody died by suicide or is murdered. The opinion expressed (on the subject of what the deceased might or might not have thought or planned) was a legal opinion and was therefore speculative in the exact legal sense: it was not based on facts that can be independently verified.

Paula’s inference that she would not have written a suicide note if it was not, was based on disputed behavioural assumptions. Evidential failure = A methodological

The danger of novel method and the danger of expertise that has not yet been tested in court. The danger of novel method and the danger of expertise that has not yet been tested in court.

Mark Dallagher became a murderer when the expert evidence established, he could have given rise to an earprint and it did (*R v Dallagher* [2002] EWCA Crim 1903). DNA was found to prove the earprint was not his, and the conviction was found to be unsafe.

Earprint analysis had not received proper methodological review, and was not supported by a peer-reviewed literature or controlled empirical studies, nor had been found to have an established error rate. This opinion was accepted in part because it was given in an authoritative manner and neither the defence nor the court had any means to effectively challenge it. Without requiring an empirical basis, testing history and known error rate, a court that allows expert evidence could well be sitting to convict someone on the basis of something that is not a reliable science (Evidence Based Justice Lab, n.d.; The Guardian,

2004). What was apparent was a lack of methodological criticism for the sake of showing respect for expertise rather than questioning it. Expert Statistics, Disclosure and Medical Uncertainty (6.4 R v Clark, England, 2003)

Although the expert testimony of a leading pediatrician led to the conviction of Sally Clark for the murders of her two infant sons, it was not enough to overcome the challenge from her defense team. One of the key elements was the statistical evidence that the likelihood of two SIDS in a single family by natural causes was about one in 73 million (R v Clark [2003] EWCA Crim 1020). In the year 2003 the Court of Appeal overturned the conviction for two reasons. First, it should have taken into account the genetic and environmental correlations within the families; multiplication rule for independent events was incorrectly used for non-independent events. Secondly, there had been microbiological evidence from a pathologist that indicated that one of the deaths was natural, which had not been communicated to the defense (CCRC, 2003).

The case highlights two different examples of evidential failures – a failure to use expert statistics to generate false certainty and a failure to have a collapse of disclosure obligations. These transfer to behavioural evidence. This is a structurally identical claim to the bogus statistic, that “there is a very low probability that an innocent person would exhibit this behavioural pattern”. If an expert does not state the range of interpretations, he has not fulfilled the objectivity obligations that he has to the patient in that role (BMJ, 2003).

In the case of *Diaz v. United States* (2024), the United States Supreme Court addressed the Expert Testimony and the Mental State Boundary. *Diaz v. United States* (U.S. Supreme Court, 2024): Expert Testimony and Mental State Boundary.

In *Diaz v. United States* (2024), the Supreme Court determined that expert testimony that most drug couriers know that they are transporting a large quantity of drugs does not constitute a violation of FRE Rule 704(b), as long as the expert asserts a general population proposition and does not draw a conclusion about the specific defendant's knowledge. The importance of the behavioural evidence is clear: the line between what an expert can say about offenders of this type and what a witness can say about this defendant's mental state is crossed when the expert says "offenders of this type typically plan carefully" and the witness says "this defendant planned carefully". Courts are required to recognize and thwart this transition.

7. Practical considerations for courts evaluating behavioural expert evidence

Based on the above framework and case analysis, the following practical guidelines are suggested. The court should ask the proponent to be as specific as possible about the particular fact in issue to which the behavioural evidence is directed: clarity of purpose is essential to determining the relevance, reliability, and prejudice of the behavioural evidence. Secondly, qualification needs to be specific to the field: a clinical risk assessment expert cannot be a crime scene staging expert or a geographic profiling expert. Third, the court should apply the Daubert criteria (*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 1993) to behavioural analysis, the same as it does to any other type of analysis: has it been tested, is there a known error rate, has it been peer-reviewed, is it generally accepted?

The expert opinion must be based upon identified and sufficient facts, otherwise it is a profile based upon case reading, which does not meet the requirement for facts. Fifth, the court must make it clear that a profile is a hypothesis and not evidence of guilt, a

matching profile is not proof of guilt. Sixth, courts should be mindful of the issue boundary of the ultimate issue, as *Diaz v. United States* (2024) sets forth, population-level inference is okay, opinion of the specific defendant on whether he or she is mentally ill is not. Prejudice must be specifically addressed under Rule 403 and other similar rules to balance with probative value, seventh. Eighth, the full disclosure requirements have to be adhered to – the consequences of not doing this are in evidence in the Sally Clark case. For a jury which is entitled to receive evidence, limiting directions are necessary: the jury must be told that the evidence is not conclusive, and that they are free to disbelieve it.

8. Risks and Limits

There are a few limitations that must be noted. First, the cases are drawn mainly from the United States and United Kingdom; the law principles that are identified hold true in common law jurisdictions, but they do not work exactly the same way – in, for instance, India, *Daubert* doesn't exist. Second, the article deals with profiling in expert testimony as opposed to all behavioural evidence, for which related but different issues arise. Third, the failure of certain applications does not mean that there is no place for behavioural analysis in court. If performed by a trained expert and in a validated manner, threat assessment, geographic profiling, and structured crime scene analysis can truly help the courts. This argument is that such evidence needs to be held to the same high legal standards as any other form of expert evidence.

9. Conclusion

This is a legal process of passing on the “behavioural evidence” from investigation to trial, which must be substantively justified at every stage. The information gained from a profile isn't handed over to the court of law automatically. A court examines the evidence

to determine if it meets certain legal requirements: qualified expert, a reliable method, a relevant conclusion, adequate factual foundation, disclosed materials, and outweighs prejudice.

The cases discussed demonstrate where and why behavioral evidence does not satisfy those. There were no validated methods for similarity inference in Fortin. In Gilfoyle, psychological reconstruction was based on unverifiable speculation. In Dallagher novel technique was admitted without any question raised and an innocent man convicted.

Poorly produced statistic and a failure to disclose led to one of England's biggest miscarriages of justice in Clark. In Diaz, the Supreme Court drew the distinction between legitimate population inferences and illegitimate opinions on the defendant's state of mind.

Each failure has an evidential root/cause each is an exact statement of a legal flaw – methodological, qualification, disclosure or evidentiary length – that could have been filled by judicious gatekeeping. The main point is that profiling never falls due to the unwillingness of courts to accept psychology. It breaks down when psychology is offered/presented as law. The courts that have been set up under this article find themselves in a position to make principled decisions about when behavioural evidence helps justice – and when it harms it.

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