Chapter 15
Suspect Sciences?
Evidentiary Problems with Emerging Technologies

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ABSTRACT

This article examines the standards governing the admission of new types of expert evidence. Based on the rules of evidence and procedure in Australia, it explains how judges have been largely uninterested in the reliability of expert opinion evidence. Focused on the use of CCTV images and covert sound recordings for the purposes of identification, but relevant to other forensic sciences, the article explains the need for interest in the reliability of incriminating expert opinion evidence. It also explains why many of the traditional trial safeguards may not be particularly useful for identifying or explaining problems and complexities with scientific and technical evidence. In closing, the article argues that those developing new types of evidence and new techniques, whether identification-based or derived from IT, camera or computer forensics, need to be able to explain why it is that the court can have confidence in any opinions expressed.

1. INTRODUCTION

This article uses recent developments surrounding the admission of expert evidence derived from images and sound recordings to critically examine the response to new forms of incriminating expert opinion evidence in Australia. The article argues that forensic sciences, biometrics and other forms of expert identification and comparison evidence, along with incriminating expert opinion evidence more generally, should all be demonstrably reliable before they are relied upon by the state in criminal proceedings.

The article begins with a succinct introduction to rules regulating the admissibility of expert evidence in Australia and then considers several cases exemplifying the ways courts have responded to new and emerging forms of expert opinion evidence in order to explain some of the problems with contemporary jurisprudence and practice.

2. THE AUSTRALIAN ADMISSIBILITY FRAMEWORK

How have new forms of expert identification evidence been received in Australian courtrooms? To understand recent developments we need to review the rules of admissibility prescribed by the Uniform Evidence Law (UEL) and the common law.[1] Here, it is useful to explain that there are basically two systems governing the admissibility of expert opinion evidence in Australia. The most recent, the UEL, is a statutory regime based on a series of substantially similar evidence acts applicable in New South Wales (NSW), Tasmania, the Australian Capital Territory, and the Federal Court. Significantly, it will soon operate in Victoria. The alternative system is the common law (and several parochial acts), applicable in Queensland, Western Australia, South Australia, the Northern Territory and Victoria (in the interim).

According to the UEL, to be admissible all evidence must be *relevant*:

56 Relevant evidence to be admissible
  (1) Except as otherwise provided by this Act, evidence that is relevant in a proceeding is admissible in the proceeding.
  (2) Evidence that is not relevant in the proceeding is not admissible.

Evidence is relevant if it has *probative value*. The UEL *Dictionary* explains that the "probative value of evidence means the extent to which the evidence could rationally affect the assessment of the probability of the existence of a fact in issue." Consequently,

55 Relevant evidence
  (1) The evidence that is relevant in a proceeding is evidence that, if it were accepted, could rationally affect (directly or indirectly) the assessment of the probability of the existence of a fact in issue in the proceeding. …

Normally, even if relevant, opinions are presumptively inadmissible. Under the UEL the *opinion rule* (section 76) states that "evidence of an opinion" is not admissible "to prove the existence of a fact about the existence of which the opinion was expressed". This means that witnesses cannot usually express their opinions about issues relevant to facts in dispute during proceedings. There are, however, several exceptions to the exclusionary impact of the opinion rule.[2] Although it does not attempt to codify the common law, section 79(1) provides the major exception for expert opinion evidence. It reads:

79 Exception: opinions based on specialised knowledge
  (1) If a person has specialised knowledge based on the person's training, study or experience, the opinion rule does not apply to evidence of an opinion of that person that is wholly or substantially based on the knowledge.

Provided an "opinion" is "wholly or substantially" *based* on "specialised knowledge" which is *based* on "training, study or experience" it is not caught by the exclusionary opinion rule.[3] Where these conditions are satisfied, a witness can proffer relevant opinions about facts in issue, subject only to the exclusionary discretions and the requirement that the trial be substantially fair. In criminal proceedings, incriminating evidence is to be excluded if its probative value is outweighed by the danger of unfair prejudice to the accused (section 137).[4] In all proceedings, the probative value of the evidence should also be weighed against the danger that it is misleading, confusing, or an undue waste of time (sections 135 and 136) (Edmond, 2008).

At common law a witness is usually prevented from expressing an opinion unless they are an "expert" in a recognisable "field of knowledge" (which is legally relevant to the facts in issue). This means that the witness must possess some

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