

CHAPTER TWENTY-THREE: Experts, Lay People and Forensics

Introduction

- *Forensic science* is the application of science to those criminal and civil laws that are enforced by police agencies in a criminal justice system.
- *Pre-crime* defined as crime that is understood in terms of risk or potential loss. Discourses of safety are often prominent (trying to prevent it).
 - Forensics are used in investigations to detect, identify and intervene before crimes occur.
- *Post-crime* defined as crime that has already occurred and needs investigation post hoc.
 - Forensics used to retroactively identify and investigate a criminal event.
- Forensic science providers have become key players in the court process as expert witnesses.
- Functions of forensic science:
 - Informs law enforcement during investigations about the nature of crimes.
 - Assist in the detection and prosecution of known offenders.
- Courts have an important role in determining:
 - Reliability of forensic evidence
 - Creating new standards for forensic testing
 - Ensuring that the existing legislation is being followed by police officers
- It is important for the courts to ensure experts are:
 - Qualified to present evidence
 - Presenting unbiased and reliable evidence
 - Capable of presenting complicated scientific material to a layperson

Forensic Evidence in the Court Room

- Forensic science is used in criminal trials to determine the legal guilt or innocence of a defendant.
- By allowing a judge to rule certain evidence as inadmissible, courts can exclude unsafe evidence, ensure that police follow the legislation and can create new standards within the scientific community before such evidence is admissible again.
- Admissibility of evidence depends on several factors including:
 - Reliability of the evidence
 - Manner in which the evidence was obtained
 - Interest of fairness of accused
 - In relation to public interest
- Fingerprinting types include plastic, visible and latent.

Determining the Reliability of Forensic Evidence:

- Role of the court is to keep out scientific evidence that has not been proven or accepted as valid by the general scientific field.
- The *Frye standard* states that evidence that gains acceptance in the particular field in which it belongs makes it reliable.
- The *Daubert standard* states that experts are required to prove that a scientific technique has been tested and proven to be reliable, and that it is relevant to the case at hand.
 - Three-pronged approach that states that for evidence to be deemed reliable, scientists presenting expert evidence need to show that the evidence:
 1. Has been peer reviewed and was generally accepted by the scientific community
 2. Is of sound methodology
 3. Has a known error rate.
- DNA evidence can only show a degree of probability that a crime scene matches an accused person.
- DNA evidence alone cannot prove guilt beyond reasonable doubt.

Creating New Standards for Forensic Tests

- In some cases, experts are testifying in court without any proof of scientific validation.
- Many approaches are very subjective and therefore usually inaccurate including:
 - Bite mark comparison
 - Voice comparison
 - Handwriting comparison
- DNA evidence was banned from Victorian court cases from the end of 2009 to January 2010.
- It has been claimed that *fingerprint friction ridge analysis* has zero error rate, which is not actually possible.
- Lack of standards surrounding fingerprint evidence.

Ensure that Legislation is Followed:

- Courts can exclude expert testimony on forensic evidence if it was found that evidence was collected in contravention to a particular piece of legislation.
- Australian judges routinely decide to exclude illegally obtained DNA samples on the ground that the police's error was inadvertent and done with the best of intentions of the wider community.