Fingerprints
‘A Whorlwind Tour’

A Guide To Expert Fingerprint Evidence
Presented by Philip Gilhooley
Independent Fingerprint Consultant
My Background

- Over forty-five years experience
- Qualified to National Advanced Fingerprint standards by National Training Centre for Scientific Support
- Fellow of the Fingerprint Society
- Ex. Head of Merseyside Police Fingerprint Bureau
- Knowledge of all Police National databases and Case Management systems
- Sessional Lecturer in Forensic Science at Liverpool John Moores University
- Recently instructed by Solicitors nationally in high profile Murder and Drug trials.
Physical evidence versus Testimonial evidence

Value of Physical Evidence

**Physical evidence** "can't lie, quit, die, forget, or get fired"

**Testimonial evidence** may change (deliberate or accidental means), be contradicted or the source may become hostile
An Expert Witness’s duty is to the Court

Stated case in relation to fingerprint Experts
Regina v Darvell & Darvell 1992
Lord Chief Justice Taylor

“It should hardly need to be said that the function of fingerprint experts should comprise the exclusion of the innocent just as much as the implication of the guilty. If this is not presently so, it should become so immediately”.

Why are fingerprints and other forensic trace evidence so important

• Catching offenders in the act – very rare
• Witness to testify – almost never!
• Forensic evidence provides the major contribution to prosecute high profile offenders - more and more

How do Police Forces react

• (Merseyside Police) employs 40+ staff in the Fingerprint Bureau
Fingerprints and palmprints of a monkey

If your client says it was his pet monkey that did it, they may be right!!
Some significant dates and events

• 1901, first Fingerprint Bureau established at New Scotland Yard
• 1902, first conviction in England using fingerprints, Harry Jackson was convicted of Burglary in South London. 7 years imprisonment
• 1905, first conviction for murder in England. The Stratton brothers are tried and convicted on fingerprint evidence for the vicious murder of Thomas and Ann Farrow
Physical evidence at Crime Scenes - Fingerprints

Their uniqueness is based on 3 important principles:

- Fully formed before birth
- Persist throughout life unchanged
- Unique to the individual
Fingerprints at crime Scenes

Fingerprints can establish that a crime has been committed or can provide a link between a Crime and its victim or the suspect.

Fingerprints can stand alone to convict
R. Castleton  1909

‘The Court may accept evidence of fingerprints though it be the sole ground for making an identification’.

H.M. Advocate v Hamilton  (Scotland) 1933

“Fingerprint evidence is undoubtedly competent, that is settled”.....
Development of Latent fingerprints

At crime scenes latent prints are usually developed with a variety of powders:

A variety of chemical treatments in the Laboratory
Identification Process and Methodology

The holistic approach

- **A** - Analysis
- **C** - Comparison
- **E** - Evaluation
- **V** - Verification

Every Identification must be checked by at least three people, two of whom should be registered experts.
What Are Fingerprints

Black lines show furrows between the ridges.

White lines show ridges raised on the skin.
Fingerprints – Ridge Characteristics

RIDGE ENDING

BIFURCATION
Fingerprints – marking ridge characteristics

Marking characteristics
Trace evidence at Crime Scenes - Fingerprints

Characteristics agreeing in Sequence

Crime scene mark

File copy
The real case prints!!

If only they were all that good!!!!
Fingerprints taken as a result of a criminal enquiry are held on a National database.

Database contains about 7.5 million sets

Prints from crime scenes are analysed and searched against the data base

Experts verify the results and provide evidence for court
Taking Offenders fingerprints – new Technology

- Inkless system
- Better quality
- Verification of identity within 30mins
- Ensures quality database
- Searches offenders against unidentified cases
Standards of Fingerprint Evidence

- **1953** - The Home Office and five national fingerprint Bureaux reached an agreement on the standard for fingerprint identification evidence - 16 characteristics in 1 impression. If there were more than 1 impression, 10 characteristics in each.
- **1983** - National Fingerprint Board (Police) revised the Standard to include impressions with less than 16 characteristics in ‘Crucial and dire’ circumstances.
- **2001** - The non numeric standard is introduced into England and Wales.
The non numeric standard
- Stated case (1)

Regina v. Buckley
Court of Appeal (Criminal Division)
143 SJ LB159
Hearing Dates 30th April 1999
Judges advice for cases post implementation of a non numeric standard

• Fewer than eight characteristics it is unlikely a Judge would admit such evidence.
• The prosecution should not seek to adduce it
• Eight or more characteristics it may be that a Judge would admit the evidence but would depend on the following being included in the Fingerprint evidence:
If the Judge were to admit the evidence it Should include:

- The experience and expertise of the witness
- The number of similar ridge characteristics
- Whether there are any dissimilar characteristics
- The size of the print, in that the same number of similar characteristics may be more compelling in a fragment than in an entire print
- The quality and clarity of the print relied on which may involve possible injury, as well as factors such as smearing or contamination
Stated case (2)

- **R. v DENT (1994)**

   This case indicates the requirement when evidence of identification is given whether in statement or orally, it must include a reason how the conclusion was arrived at.

   - “Expert evidence is not complete unless the basis for it is clearly given... the statement provided made no mention of the number of characteristic points found in the impression”.


National guidelines for what statements should include

Declaration stating:-

- The years experience that the Expert has.
- Trained to National Advanced standards.
- Included on the National register of Police and Government Fingerprint experts.
- That in their experience they have never known fingerprints from different individuals to be the same.
- Importantly the basis on which they have reached their conclusion
Basis for reaching their conclusion

Should be in tabulated form

<table>
<thead>
<tr>
<th>Impression numbered/exhibit number</th>
<th>Corresponding impression on Fingerprint/palmprint form – A.N.Other(Exhibit JC/1)</th>
<th>Features in agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATA/020/13 disclosed on exhibit JD/1073</td>
<td>Right ring finger</td>
<td>Ridge pattern/flow and 14+ ridge characteristics</td>
</tr>
</tbody>
</table>
High profile mistakes

Brandon Mayfield is an American attorney in Washington County, Oregon. He is best known for being erroneously linked to the 2004 Madrid train bombings.

Detective Shirley McKie identified by Scottish Fingerprint Bureau. She denied leaving her fingerprint at the home of Marion Ross who had been murdered.
In terms of fingerprints analysis not a poor mark
In my opinion this fingerprint was not suitable for comparison.
The Inquiry Report was published on 14 December 2011 by the Chairman The Rt Hon Sir Anthony Campbell
86 recommendations came from the enquiry including:

- Fingerprint evidence should be recognised as opinion evidence, not fact.
- Examiners should discontinue reporting conclusions on identification or exclusion with a claim to 100% certainty.
- Features on which examiners rely should be demonstrable to a lay person with normal eye sight as observable in the mark.
- Examiners should consider whether the clarity of the mark is sufficient to support a confident conclusion of identity or exclusion.
- Complex marks should be treated differently.
Murder case - 2012/2013

Area for comparison
Finger twisted
Deceased right middle finger- handle of knife

The position and orientation of the mark VA/1 reproduced above are in my opinion, and based on me overlapping my right hand on the actual knife, are consistent with the knife being gripped by the handle by the deceased.
Mark of the defendant- Allegedly on the handle of the Knife
Crown’s Fingerprint expert stated that the impression VA/2 was on the handle of knife. It was actually on the blade. Could be more consistent with a defensive touch!
3 characteristics I could see
A case only came to trial 3 weeks ago

- Defendant arrested in the vicinity of where a gun in a plastic bag was found.
- Evidence was presented that his fingerprints were on the carrier bag.
- My opinion was that the fingerprint did not contain sufficient detail to be satisfied that it could only be his.
- Review of the case disclosed a document stating that an Expert in the same Bureau agreed with my findings.
- The fingerprint evidence was allowed to go to Jury,
- We will never know what they determined about it.
Should Fingerprint evidence be challenged? Let me summarise

- Fingerprint evidence, until fairly recently, has been accepted without any meaningful challenge.
- I am not gamekeeper turned poacher!
- I will always be objective
- I will never discredit fingerprint evidence that has been correctly presented.
- I only wish to protect the best means of personal identification that Countries throughout the world recognise.
- I just urge you to view fingerprint evidence with the same objectivity that you view all evidence
Blood on surface or the finger
Blood on surface or the finger

Blood extends outside the area of the finger impressions
Aging of fingerprints and how long they can last

Original plates used by Nicephor Niepce, a French Inventor to produce the world's first photographs in early 19th Century. Fingerprints are still on the plates today!!
Camera View showing Bedroom Layout
Blood indicates the degree of violence
Shows the fingerprint which was identified
Ground Floor Layout - showing C.S.I. exhibits

Offenders Fingerprint.

Offenders Fingerprint in blood recovered at scene.

Note: Doors shown below in closed position.
Murder of Joan Moorcroft

Body found in a coal bunker

Piece of skin found in mouth
What do you see in the core?

This fingerprint allegedly belongs to Mother Teresa. You can predict what religious commentators see in it.
The End

Any hard questions and the cat gets it!!
Contact details

• Forensic Science Consultants and Expert Services
Call us on 01606 822448 or Email: admin@firstforensic.co.uk