

# **New Methods in Human Identification**

**Sue Black**

# Warning

This presentation contains some images that might cause offence.

This presentation may not be copied as some cases are currently active although anonymised.

**Confirmation of likelihood of identity requires a comparison of two datasets.**

These may be between:

- A characteristic and a stored database or information set

- Antemortem and postmortem information

- Suspect and offender etc.

But there is a biometric.

# Biometrics

The building blocks of identification are “identifiers” facts that distinguish people and entities from one another. Although there are many different types, identifiers have traditionally been grouped into three categories; something the user “has”, something the user “knows”, and something the user “is” (Clarke, 1994).



Something user is - Biometric

Something user knows – PIN, Password

Something user has – Card, Token

## MPS - Case 1

5 8 2005  
4:39:16

Within this slide is a useable biometric

## **Outcome:**

Suspect found not guilty.

Evidence deemed admissible by Judge on three counts:

- Pedigree of human anatomy

- Recognised biometric although not in this body part – but reliance given to reason of anatomy experience

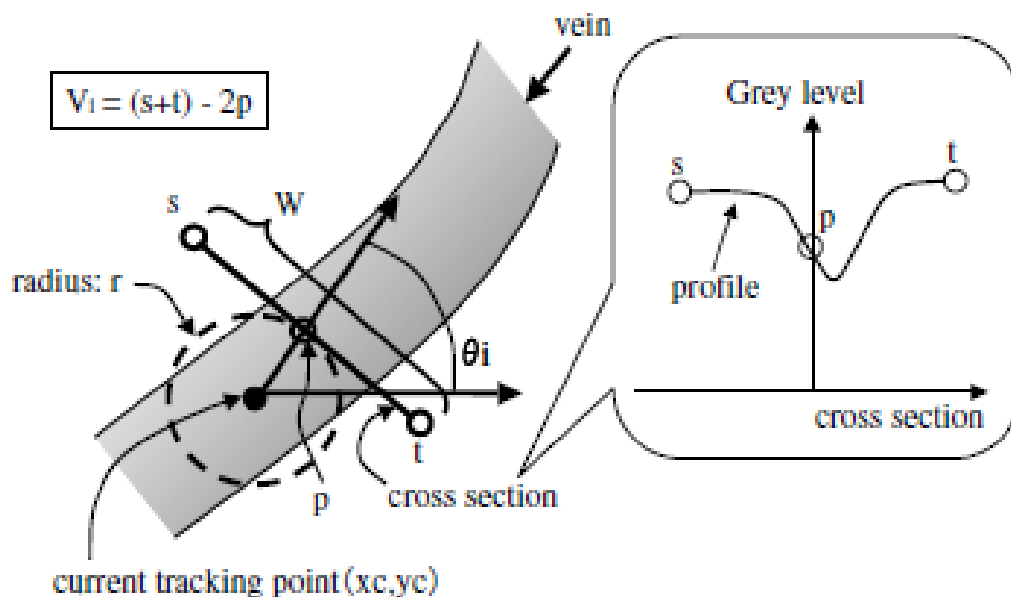
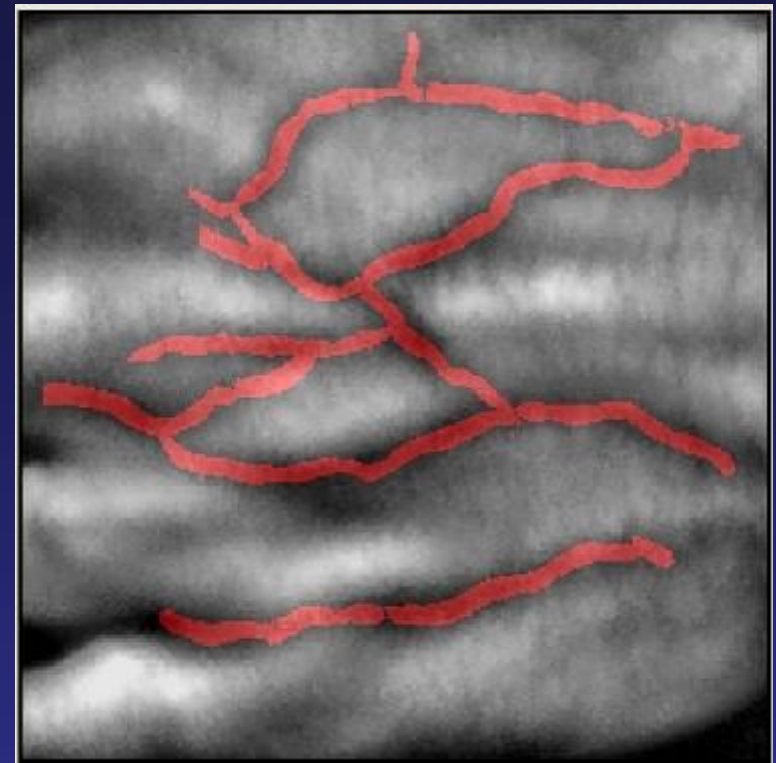
- Comparison of images

Near-infrared rays generated from a bank of Light Emitting Diodes (LEDs) penetrate the region of interest and are absorbed by the deoxygenated haemoglobin. Due to differences in absorbance between veins and other tissues, the reflected near-infrared rays produce an image in which regions of high absorbency (specifically the veins) appear as dark lines in an image captured by a Charge-Coupled Device (CCD).



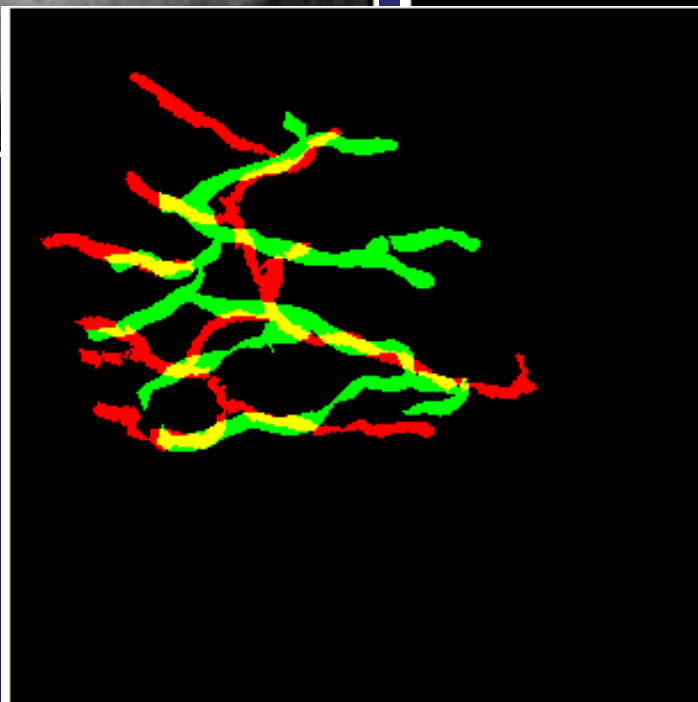
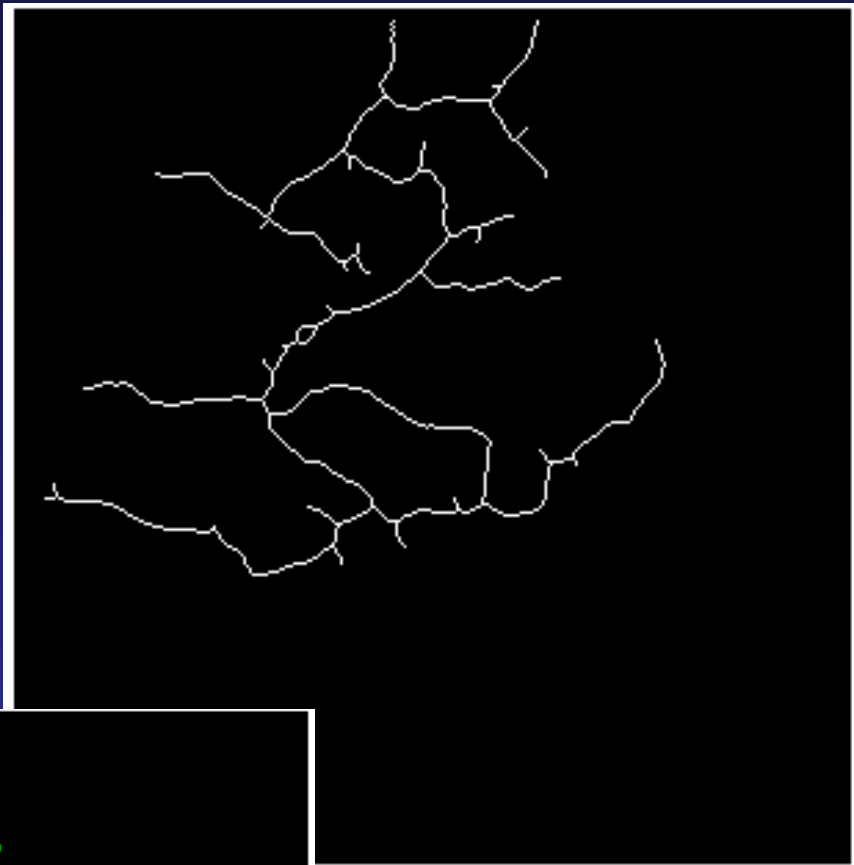
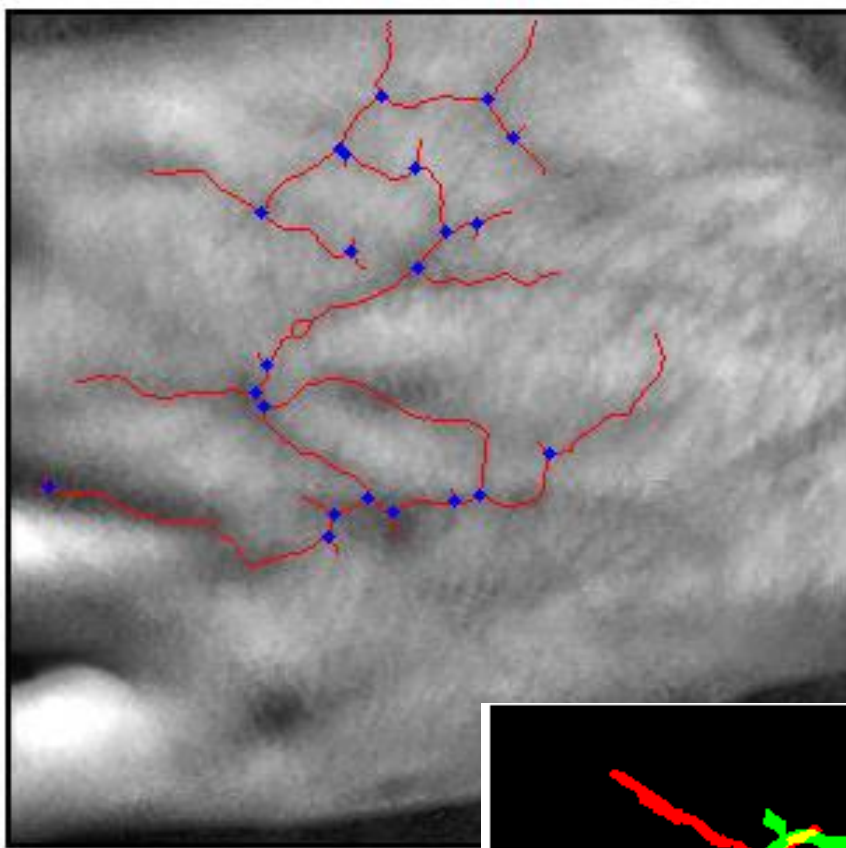
Helen Meadows (Funded by an Anatomical Society Studentship)





Alice Bellini, Adria  
Perez Rovira, &  
Emanuele Trucco  
(University of  
Dundee)

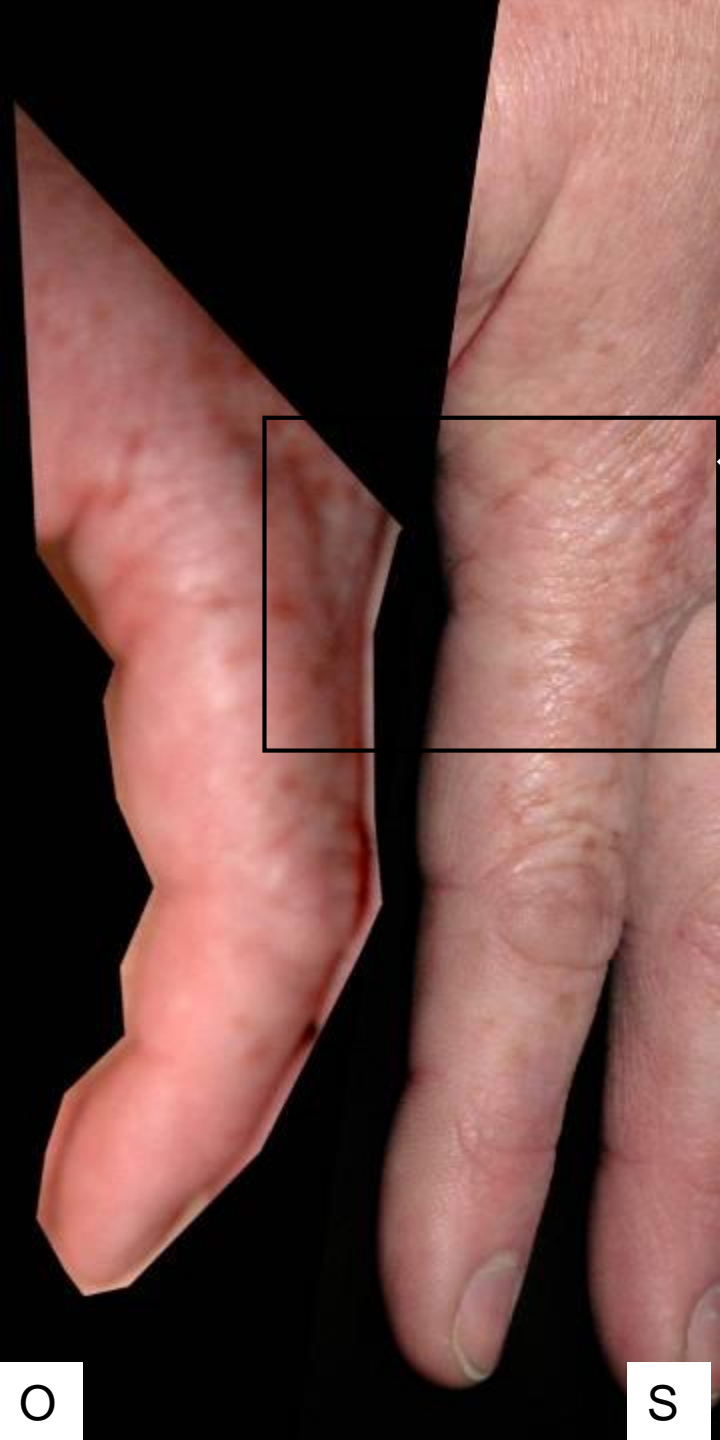




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Perez Rovira, &  
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(University of  
Dundee)



Suspect – Dean Lewis Hardy



Position of scar on left index finger  
of offender (O) and suspect (S)



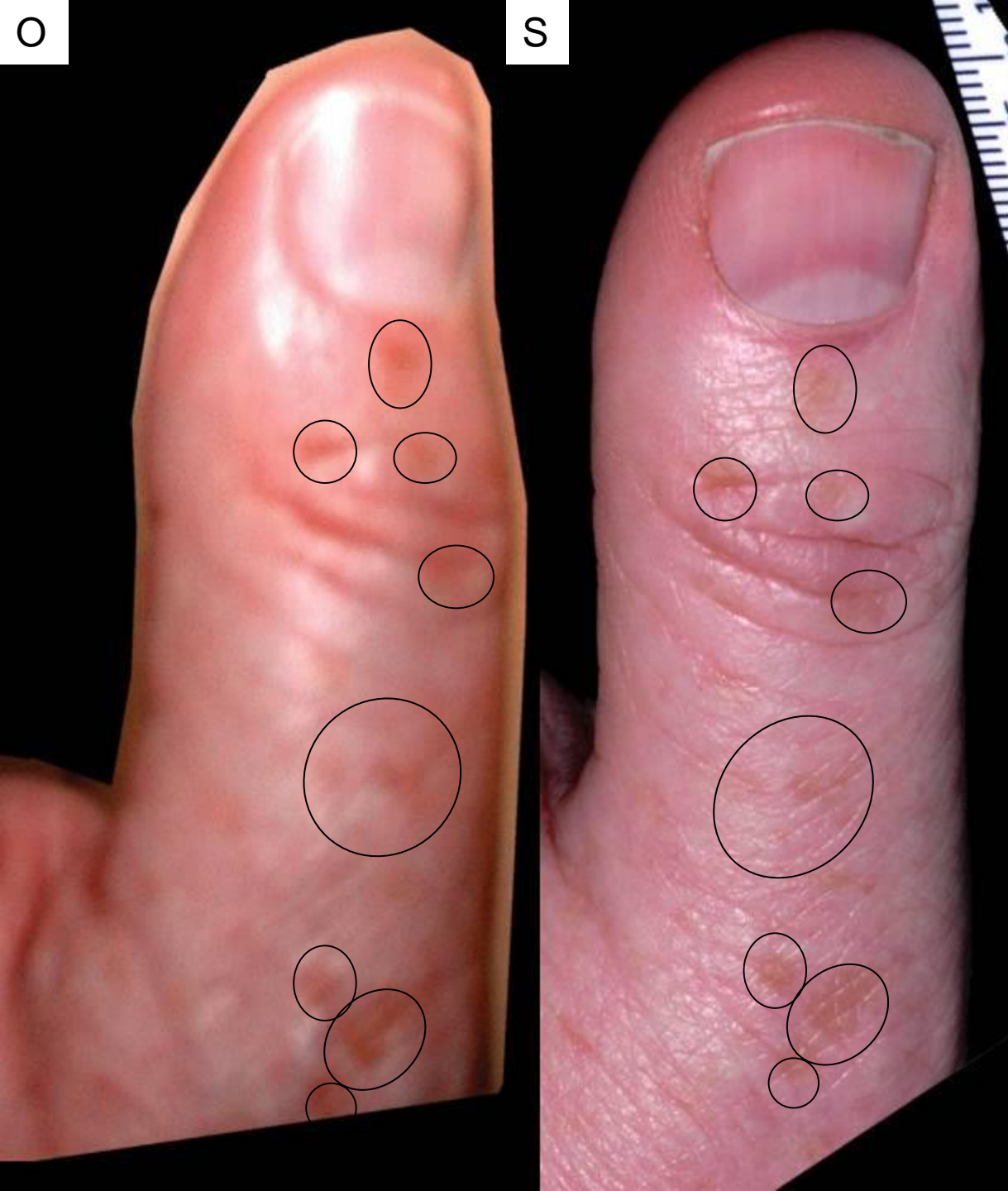




Position of areas of pigmentation in relation to scar on index finger of right hand. O=offender, S=suspect

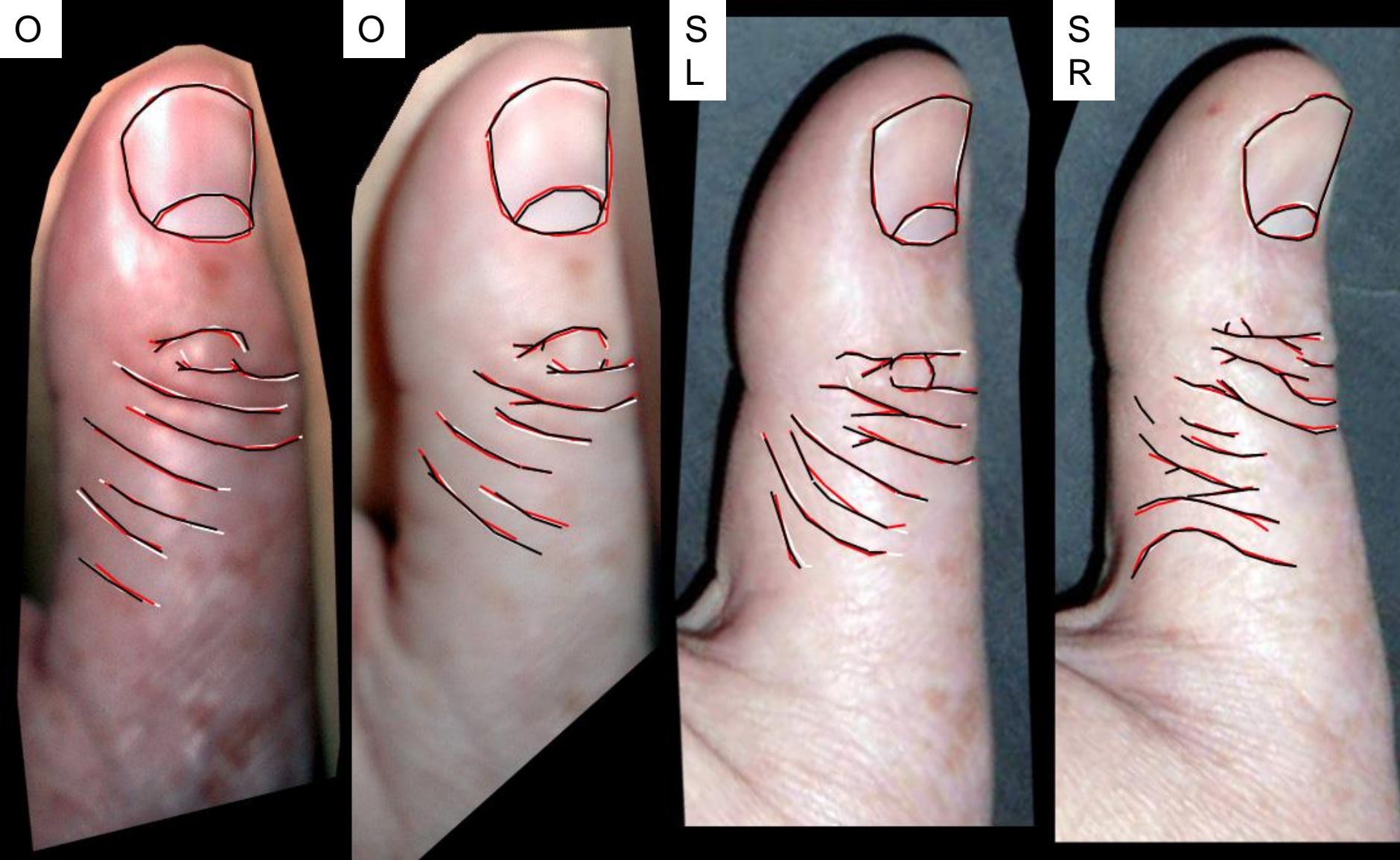
O

S



Left thumb – Offender (O)  
and suspect (S).  
Matching of areas of well  
defined pigmentation.





Comparison of offender (O) and suspect (S) skin creases and nail bed morphology. R = right and L = left thumb.

Our conclusion:

There is no evidence to support the hypothesis that the offender and the suspect are different individuals. There is strong evidence to suggest that the offender and the suspect share multifactorial similarities of differing aetiology and do not share any significant dissimilarities. On balance there is more evidence to support the hypothesis that the offender and suspect may be the same individual rather than to reject it. There are more differences between the right and left sides of the suspect than occurs between the left hand of the suspect and the left hand of the offender.

In other words, we cannot exclude the suspect from being the offender and whilst there are a lot of similarities we are unable to give any clear guidance on probability.



When confronted, Dean Lewis Hardy admitted to two indecent assaults and several incidences of child abuse. It is thought to be the first paedophile case in the UK in which an offender was identified by their hand. Sentencing at Southwark crown court, Judge Gregory Stone said: "This was sex tourism of the most offensive kind."

Hardy was jailed for six years and will be on the sex offenders' register for life and prosecutors are trying to secure a travel ban.



**Next two slides could  
cause offence.**

So how do we manage the relationship between investigative demand, scientific research and court room admissibility?

Who are the partners?

Who takes the responsibility?

Who sets the pace?

In an ideal world.....



However .....



Ideally.....



Or even.....



What we will NEVER hear.....

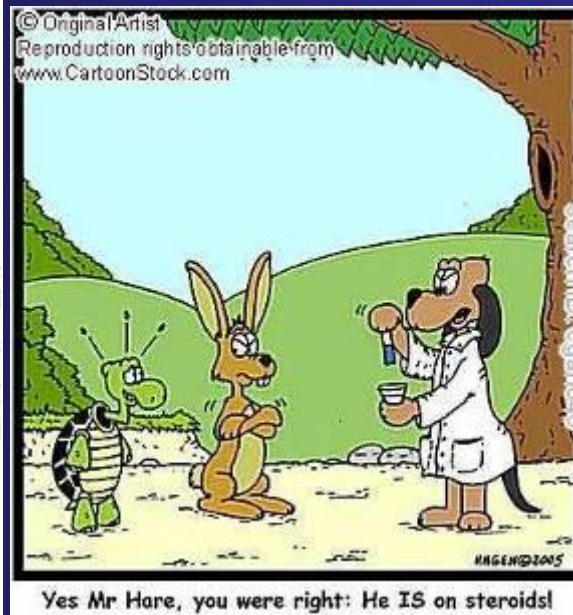
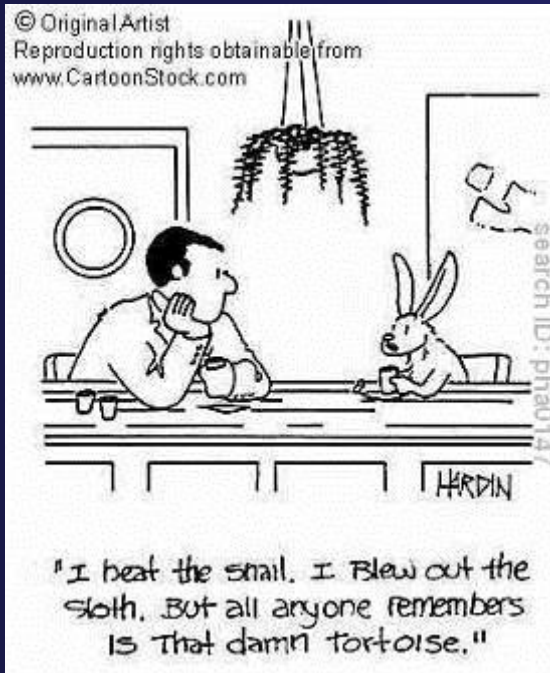




We need to avoid .....



But we also need to avoid .....





We have to strive to achieve  
the best outcome

Outset of an important approach to identification from images –

- Data base, data collection and data analysis - ongoing
- Standardising procedures – images and analysis - ongoing
- Admissibility – accepted in part
- Probability/likelihood - ongoing
- Reliability – being tested
- Robusticity – being tested
- Validation – being tested
- Ethics – addressed via PACE and research ethics

Working with: HOSDB, CEOPS, Forensic Regulator and others



# Thank you

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## Acknowledgements:



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Perez Rovira