

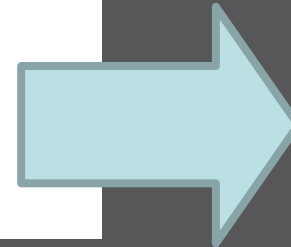
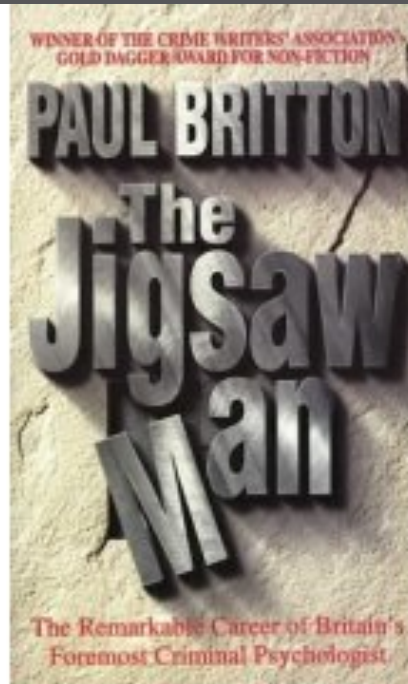
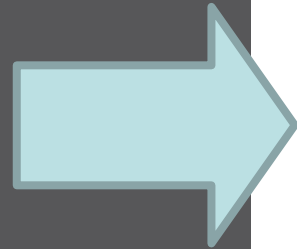
Use of forensic science in the investigation of crime

Professor Jim Fraser
Associate Director
Scottish Institute for Policing Research

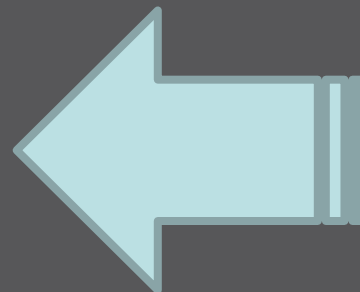
- FS is a distinctive provider of evidence to CJS
- Science & technology will continue to infiltrate the CJS steadily
- Forensic science is co-produced and sub structured not monolithic
- The approach to dealing with forensic science is largely unsystematic
- There is frequent focus on individual cases failures but system failures are probably a more important issue



Murdered
1994



Napper
convicted
December
2009



- ‘Forensic’ + ‘science’ is an Anglophone construction (technical crime investigation)
- General history
 - Medicine
 - Policing (1930s in England, 1960s)
 - Specialist skills
- Specialisation, skills and professional influence

- ‘Modern history’ 1980s- (England & Wales)
- Modern history - Scotland
- International perspective
- Co production – policing and law
- Forensic science as a rhetorical device

1981 - 1987

Byford (1981)

- LIMITED COMMUNICATION
- BACKLOGS
- ROLE AWARENESS
- LIMITED RESOURCES
- PERIODIC OVER-SUBMISSION
- POOR TRAINING
- BUDGETS
- POOR EVIDENCE USE
- ~ staff turn-over
- ~ limited standardisation
- ~ poor skill development

Burrows (1986)

- POOR TRAINING
- TIMELINESS

Touche Ross (1987)

- VARIATION IN STAFFING
- WORK LOADS
- POOR UNDERSTANDING OF FORENSIC CONTRIBUTION
- inconsistent work quality

Ramsay (1987)

- POOR KNOWLEDGE OF EVIDENCE VALUE
- INADEQUATE COMMUNICATION
- LACK OF TRAINING
- TIMELINESS

1994 - 1996

Saulsbury *et al.* (1994)

- POOR PERCEIVED VALUE
- UNDERSTANDING OF EVIDENCE
- INADEQUATE COMMUNICATION
- ROLE PERCEPTIONS
- INFLUENCE EVIDENTIAL IMPORTANCE
- POOR TRAINING
- ~ poor evidence appropriateness
- ~ variation of sources of influence

FSS & ACPO (1996)

- LACK OF COMMUNICATION
- POOR RECIPROCAL UNDERSTANDING
- POOR ROLE RELATED TRAINING
- ~ compartmentalisation
- ~ confused ownership of data
- ~ ineffective mgmt. mechanisms

Tilley & Ford (1996)

- VALUE-FOR-MONEY
- POOR COMMUNICATION
- ~ no standardisation
- ~ poor relationships

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- OVER COLLECTION OF EVIDENCE (POOR VALUE KNOWLEDGE)
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McCulloch (1996)

- BUDGET VARIATION
- ~ no standardisation
- ~ favouritism of clear results

2000 - 2004

HMIC (2000)

- POOR TRAINING
- BUDGETS
- TIMELINESS
- VARIATION IN ROLE PROFILE
- DIFFERING JOB EXPECTATIONS
- EVIDENCE UTILISATION
- unclear legislations (national, regional, force)

Williams¹ (2004)

- CSE RESOURCE
- VARIATION OF INDIVIDUAL CSE WORK LOADS
- CSE ROLE (technical assistants V expert collaborator)
- POOR INTERNAL TRAINING (affects collaboration)

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- FRAGMENTED FORMS OF KNOWLEDGE
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2005

Bradbury & Feist (2005)

- VARIATION IN CSE ROLE EXPECTATIONS
- RESOURCE AVAILABILITY
- LOCATION AFFECTS CSE VISITS
- INADEQUATE HAND OVER BETWEEN SHIFTS
- TRAINING VARIATION
- ~ attendance policy variation
- ~ lack of uniformity

Jansson (2005)

- TIMELINESS
- TURNAROUND TIME
- HIGH WORK LOADS
- POOR RESOURCE TARGETING
- ~ unclear lines of responsibility
- ~ variation in staff experience
- ~ variation in crime-mix affects detection rates

2007 - 2009

SWIM (2007)

- SLOW TURN-AROUND TIME
- ~ variation in CSE productivity/recovery rates
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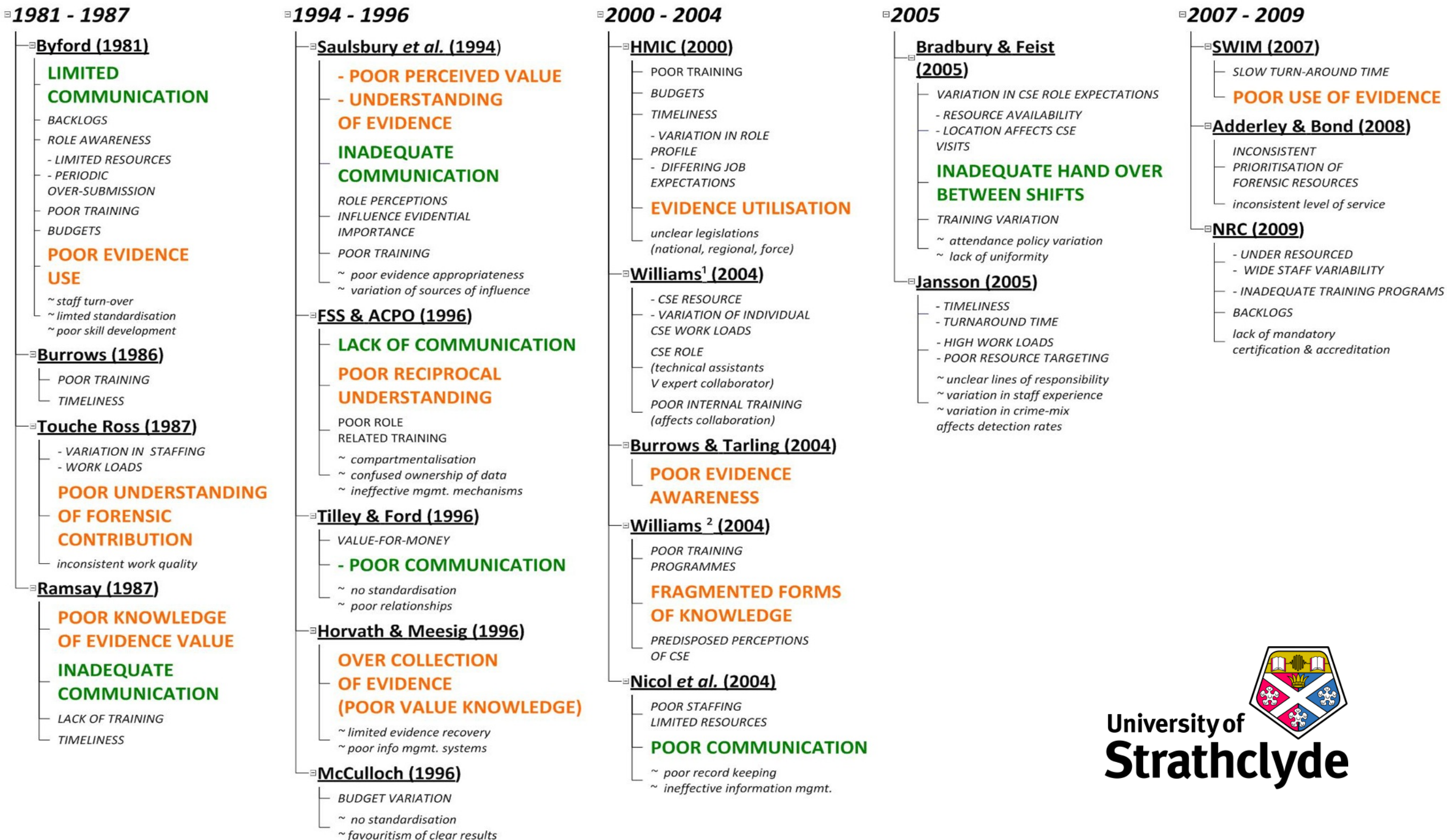
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- INCONSISTENT PRIORITISATION OF FORENSIC RESOURCES
- inconsistent level of service

NRC (2009)

- UNDER RESOURCED
- WIDE STAFF VARIABILITY
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- Nicol et al, (2004) identified amongst 6 main areas of failure in homicide reviews: 'forensics (exhibit management and submission)' as an area of particular concern with routine failure to comply with standard procedures as well as a number of cases where potential forensic evidence had been completely overlooked
- A joint initiative between the FSS and PSU (January 2004) In 213 unsolved cases in which DNA was present but had only been analysed by now out of date technology, 76 usable DNA profile were obtained resulting in 31 matches from the NDNADB. These results were central to the conviction of a number of individuals subsequently.

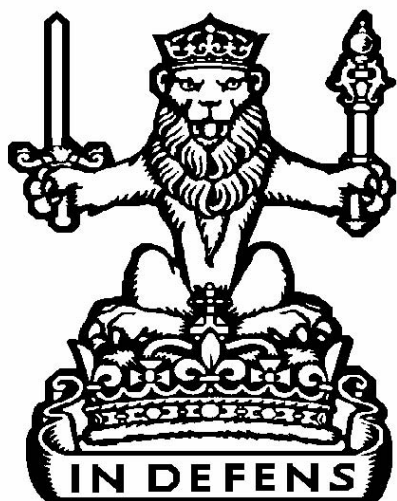


ACQUISITION AND RETENTION OF DNA AND FINGERPRINT DATA IN SCOTLAND (2008)

Term of reference: to review the operation and effectiveness ...regarding the acquisition, use and destruction of forensic data...[DNA and Fingerprints]

- What data are available on DNA and fingerprints that might provide general information on their potential or actual contribution to the criminal justice system?
- Are there any other data to inform the ...the review?

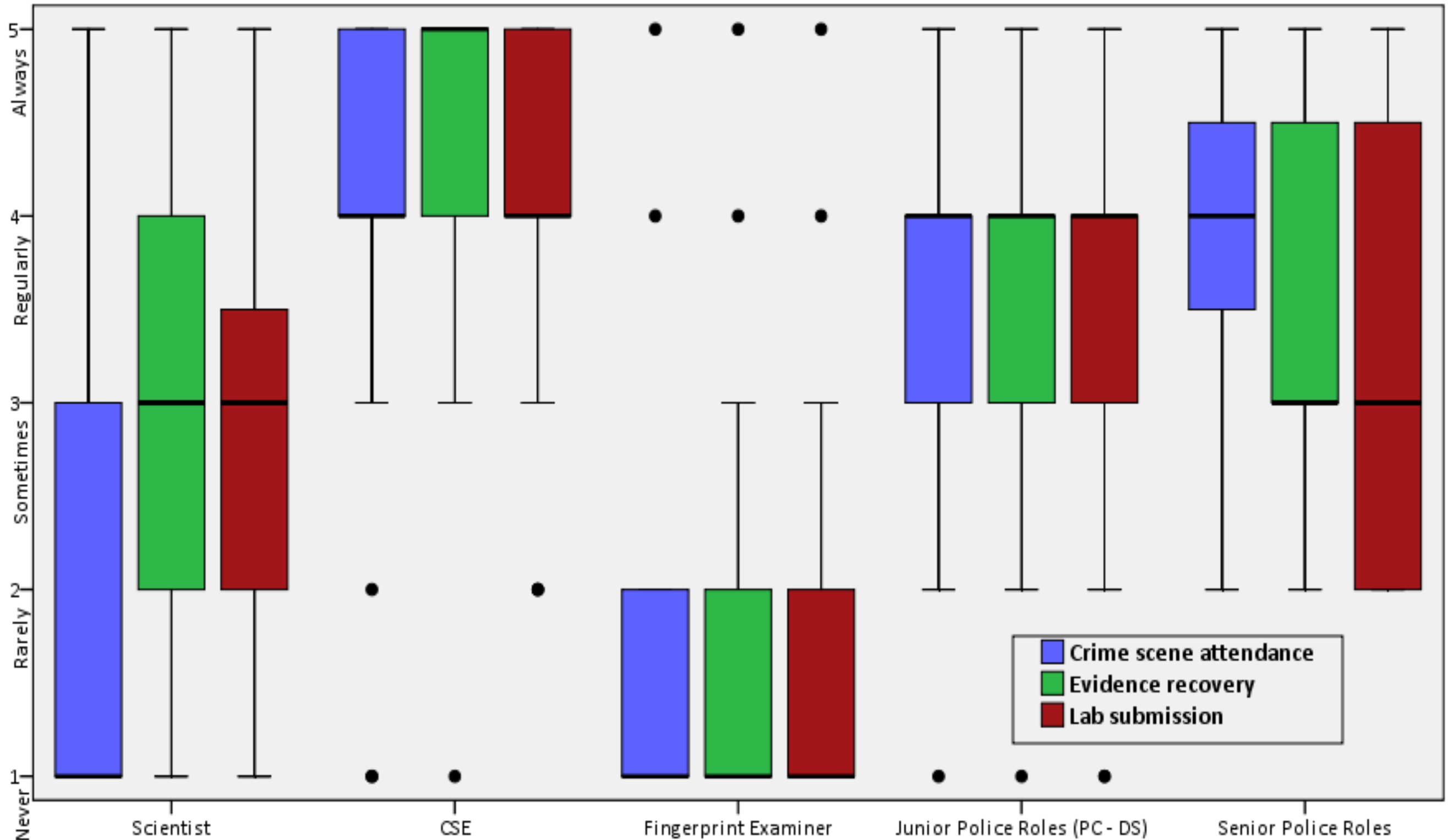
- Crown Office & Procurator Fiscal Service
- Scottish Police Services Authority
- Lothian & Borders Police
- Strathclyde Police

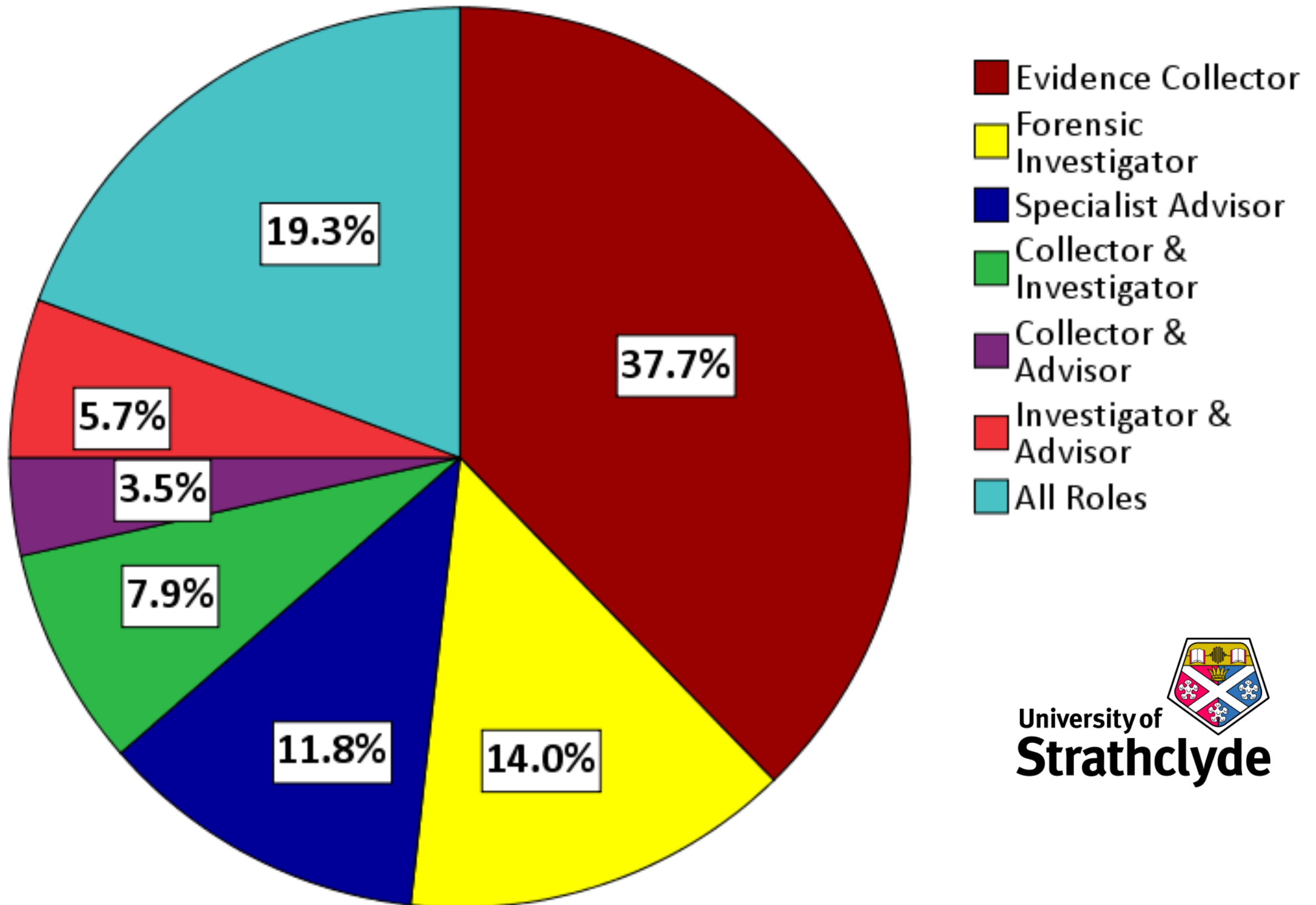


SCOTTISH
POLICE
SERVICES
AUTHORITY



Scotland	England & Wales
Theft by housebreaking (<i>with intent & attempt</i>)	Burglary dwelling (<i>with intent & attempt</i>)
Theft by opening- lockfast-place (<i>with intent and attempt</i>)	Burglary non-dwelling (<i>with intent and attempt</i>)
Theft by opening- lockfast-place (vehicle)	Taking without owners consent (TWOC)
Theft of/from motor vehicle	Theft of/from a motor vehicle





Forensic science the operation of multiple roles and procedures in a complex environment and its use is frequently sub-optimal due to multiple inter-related factors including:

- Poor reciprocal knowledge
- Lack of role clarity, labelling and stereotyping
- Poor communication
- Fragmented organisational systems
- Cultural and organisational barriers
- Poor resourcing models (financial & human)