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Crime Scene Examiners and Volume Crime Investigations: An Empirical Study of Perception and Practice

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Abstract

Most police forces in the UK employ specially trained crime scene examiners (CSEs) to provide forensic science support to the investigation of crime. Previous research has shown wide variations in the management, deployment, and performance of this staff group. There is also evidence that informal elements of professional and organisational culture, in particular the role characterisations of crime scene examiners, also have a bearing on their effective use in the investigation of high volume property crime. These issues are explored as part of a more extensive study of forensic science provision in the two largest police forces in Scotland and by the four main Scottish Police Services Authority Forensic Services (SPSA FS) units. A range of staff in these organisations described their understandings of the role of crime scene examiners – as evidence collectors, forensic investigators, specialist advisers, or any combination of these. Whilst two thirds (62%) of respondents recognised the complexity and scope of the role of CSEs including its cognitive elements, a substantial minority (38%) categorised the role as having a single element – collecting evidence – and therefore perceived it as limited largely mechanical in character. The reasons for, and consequences of, this perception are considered, and the paper concludes with a challenge to reconsider this limited view of what crime scene examiners can contribute to volume crime investigations.

Keywords

crime scene examination, forensic science support, evidence, criminal investigation

Introduction

A number of writers have drawn attention to the increased reliance on science and technology for the successful performance of contemporary policing (Ericson & Shearing 1986; Chan 2003; Innes et al. 2005; Marx 2002). The range of relevant scientific disciplines and technological innovations mentioned when this claim is made has been considerable, but the uses of forensic science to support the investigation of crime has often been at, or near to, the top of any such list. This paper focuses attention on the growing uses of forensic science, not by describing particular techno-scientific innovations but by considering the key human resources involved in applying them, the crime scene examiners – primarily responsible for examining, assessing, collecting, recording and interpreting various kinds of physical evidence at crime scenes (Horswell & Edwards 1997).

Whilst the late 19th and early 20th Centuries witnessed a growing interest in forensic science [documented, for example, by Eco (1983), Starr (2011), and Thomas (2000)] investigative applications of forensic science in the UK during this period of time were largely confined to instances of serious crime, especially homicide. Well into the middle of the 20th Century, the scene examinations which were the starting point of all such forensic science work were carried out by CID officers usually referred to as scenes of crimes officers or SOCOs (Byford 1981; Ramsay 1987). Although "skilled in fingerprint, forensic and photographic work" (Touche Ross 1987, p.7), their training was largely experienced-based and unstandardised.

However, by the 1960s, the role of UK SOCOs began to be civilianized, with forces across the UK varying between "full civilianisation and no civilianisation" (Touche Ross 1987, p.1). This process was introduced in part to reduce the work load of officers in the CID, and also as a cost-saving measure. SOCOs were increasingly located within police service Scientific Support Units (SSU), working alongside other scientific support staff. The introduction of

civilian police staff within police forces was initially often met with suspicion and disdain something noticed by the consultants Touche Ross who suggested that these civilian SOCOs "did not have the respect of the police investigators and the fingerprint and forensic science experts" with whom they work; often a result of "force policy, and local attitudes and priorities" (Touche Ross 1987, p.8). While this attitude has abated considerably, residual elements of it remain today, attributable in part to cultural differences between police and non-police, the separate location of scene examination personnel within police organisations; and a lack of knowledge by the police of the specific skills required to carry out the role (see also Waymant 1982). Police staff are police employees who do not have police powers but contribute to general police functions through specialist of skills. It is used to distinguish from sworn police officers, who have full police powers, i.e. powers of arrest.

One recommendation of the Touche Ross (1987) report was for the standardisation of the role, along with a defined set of core responsibilities. The latter they described as: photography; the search for and recovery of physical evidence (especially fingerprints) from scenes and individuals (suspects, victims, witnesses); the maintenance of forensic intelligence databases; the processes associated with specific evidence types; assisting operational detectives with enquiries, as well as "acting as a '*crime scene investigator*'" (which involves the gathering of information, identification of suspects) (authors emphasis). A footnote in the report stated that "no SOCO carries out all these tasks and some carry out only a small proportion" (Touche Ross 1987, p.57).

Following Touche Ross, a large number of subsequent reports have continued to document significant variations amongst forces in the responsibilities of crime scene examination personnel and their relationship to members of criminal investigation teams. In their study of criminal investigations, the Audit Commission found that police staff, including scientific

support, were under-resourced and experienced a "*low status*" amongst uniform police officers irrespective of the importance of their job (Audit Commission 1993). Some years later, Her Majesty's Inspectorate of Constabulary's (HMIC) report 'Under the Microscope' still observed a lack acceptance by 'investigative teams' of scenes of crimes officers, attributing this in part to the increased level of "*civilianisation*" of scenes of crime staff (Blakey 2000).

Whilst the ambivalent positioning of SOCOs or crime scene examiners (CSEs) has continued to be the subject of scrutiny and debate, their professional practice has evolved to become much more complex due to advances in the capability and sensitivity of forensic technologies. Consequently, CSEs are now required to have some understanding of the scientific processes involved in evidence analysis in order to carry out their job, and in particular, to avoid inadvertent contamination or destruction of evidence (Saulsbury et al. 1994; Harrison 2006; Crispino 2008). CSEs in the UK receive extensive training to allow them to recover physical evidence and to develop the maximum amount of intelligence from a crime scene (NPIA 2011). It is this training and consequent experience which provides CSEs with the ability to recognise materials of evidential value and consider its potential utility for subsequent analysis (Baber & Butler 2012).

There is evidence that the role of crime scene examiners is not always clearly evident or recognised by other individuals involved in the investigation of crimes (e.g. police officers, forensic scientists). Consequently, their perceived responsibilities, skill levels, knowledge and understanding, and degree of integration can vary considerably (Fraser 2003). The acceptance of CSEs by police investigative teams, and the degree of integration, has been shown to hinge on the perception of their role by others involved (Bradbury & Feist 2005; Blakey 2000).

Research studies of policing and police work have looked at officer training, routine working practices, police culture, socialisation, etc. [see for example: Hooper 1977; Holdaway 1983; Chan, Devery & Doran 2003]. However similar aspects of the occupational character of crime scene examiners are little researched in the UK. Although some work is also available which has evaluated the skills required by other highly specialised roles (DiGabriele 2008), it is only recent research by Kelty et al. (2011) in Australia that has begun to investigate the key core skills required to be a high-performing/proficient crime scene examiner. Their aim was to provide an "*explanation of why some CSEs excel at crime scene work relative to their peers*" and the impact high performance CSEs have on criminal investigations (Kelty et al. 2011, p.176). They determined that factors such as cognitive abilities, knowledge base, experience, work orientation, communication skills, professional demeanour, and approach to life were important as the qualities associated with high performance of CSEs (Kelty et al. 2011).

Previous work by Fraser and by Williams has attempted to map the range of current understandings of the role of crime scene examiners and also to consider the effects of these understandings on their performance. In a general account of police views of forensic science, Fraser (2000) drew attention to the difference between notions of "scientific support" and "forensic investigations" and also noted the variation in the degree to which forensic science was adequately integrated into UK police investigations. Williams (2004) later made use of this distinction in his study of the management, especially the integration into investigations, of CSEs in six English police forces. In this study he described differences between the "structural" and "procedural" integration of crime scene examiners resulting from differing interpretations of the "nature and utility of scientific support to crime investigation" by senior managers (Williams 2004, p.22).

Crime scene examination staff were perceived either as “expert collaborators” in an investigation (structural integration) or as “technical assistants” to police investigators (procedural integration) (Williams 2004). The label “expert collaborator” recognises the authority and specialist skills based on the relevance of distinctive knowledge-based experiences resulting in the routine application of these expertise in the investigation of crime scenes (Williams 2004). Expert collaborators are valued as reflective professionals skilled at producing and interpreting forensic materials, and competently contribute their knowledge to an investigation (Williams 2004). Whether CSEs acknowledge themselves as ‘experts’ or not, the importance of the work performed by them continues to increase (Innes et al. 2005). A view of CSEs as expert collaborators “promotes an understanding of scientific support which acknowledges the distinctive knowledge-based expertise of forensic practitioners” (Williams 2007, p.763).

Where crime scene examiners are understood as “technical assistants” they are assumed to be capable of providing information which is valid and technically reliable but which then needs to be assessed by more senior members of the investigative team (Williams 2004; Robertson 2011). This perspective implies that the level of expertise of the individual is less important as all of their work is performed under careful supervision of more senior colleagues or less “professional” (in terms of expertise), due to their “predominantly technological focus” (Fraser 2000). CSEs have a medium level of specialist knowledge or understanding of theoretical principles, but a detailed or specific practical knowledge of techniques and skills (Robertson 2011). In summary, the technical assistant perspective on the role of CSEs appears to suggest that the discipline of evidence gathering and investigation remains separate from, rather integral to, police investigations (Harrison 2006).

Figure 1 illustrates the differences that Williams found in perceptions of crime scene examiners (Williams 2004). It specifically identifies the "type and degree of 'control' that crime scene examiners' are able to exercise over their own work" and the "extent of their 'reach' into (or involvement in)" the investigation of crimes (Williams 2004, p.23). The difference between the two labels essentially indicates how well integrated into the investigation CSEs were found to be. Although the model of "expert collaborator" and "technical assistant" is a deliberate simplification, many forces "placed greater emphasis on one approach or the other" (Williams 2004, p.26). And the research demonstrated the relationship between CSE utility and these overarching organisational understandings of their work.

INSERT FIGURE 1

The Study

As part of a larger study of the use of forensic science in Scotland, a variety of post holders in the Scottish Police Services Authority Forensic Services (SPSA FS – the body responsible for the provision of forensic services to all police forces throughout Scotland) and the two largest police forces were asked about their understandings of the role of crime scene examiners in the investigation of volume crimes. At the time of data collection (2008 - 2009) a single police force had been proposed in Scotland and SPSA FS provided services for all eight forces. In April 2013 a single national force will be implemented. In Scotland volume crime encompasses various crimes of dishonesty: including theft by housebreaking, theft of a motor-vehicle, and theft by opening–lockfast–place. The equivalent crimes in England and

Wales are burglary-dwelling/non-dwelling, and theft of/from a motor vehicle (Scottish Government 2008; ACPO 2002).

Questionnaires were sent to crime scene examiners, police officers, scientists and fingerprint examiners to enable the comparison their perceptions. Over 260 questionnaires were returned (67%) and a comparatively even split of participation from police forces and SPSA FS (46% and 54% respectively) was achieved. Of the SPSA FS participants, 32% were laboratory scientists, 12% were crime scene examiners, and 12% were fingerprint examiners. Police constables and police sergeants responded at a similar rate (22% and 18% respectively).

Participants were asked to select the description(s) which best fitted their understanding of the role of crime scene examiner in the investigation of volume crimes. Options given were: Evidence Collectors, Forensic Investigators, Specialist Advisers or any combination of these descriptors. These terms were chosen since they have been widely deployed in recent discussions of forensic science support to policing in the United Kingdom. There can always be differences in what a descriptive term may denote. However, pilot work carried out in this instance confirmed the existence of a sufficient level of common meaning attributed to them by relevant actors to justify their choice.

The Evidence Collector category contains legal (evidence) and common sense (collector) elements. We generally consider this descriptor to oversimplify and constrain the role of CSEs as it fails to recognise the observational and cognitive skills necessary for ‘collecting’. As such, this is a continuation of previous terminology (e.g. ‘scientific aids’) and considered to continue the historical perception of the role of CSEs (Touche Ross 1987). Compared with the Williams’ typology, this descriptor reflects the role of ‘assistant’ that was structurally integrated.

The term Specialist Adviser was used to recognise specialist skills of CSEs, albeit that these are constrained to a degree by the notion of 'adviser'. This terminology was designed to be a neutral option (i.e. avoiding other significant descriptors used such as 'collector' and 'investigator' whilst adequately representing the role of CSE). In Williams' typology this would be categorised as an 'expert' that was procedurally integrated.

The Forensic Investigator descriptor recognises specialist (forensic) knowledge and skill in addition to the expectation to 'independently inquire' (investigate). This acknowledges the essential observational and cognitive aspects of the role. 'Investigator' in police terminology and culture has special significance and status, although in this case this is limited to a particular category of investigation (forensic) and is not equivalent to a police investigator. In Williams' typology this descriptor would also equate to an 'expert' that was procedurally integrated.

In selecting these descriptors we sought to further understand role perceptions and consider these in light of the earlier work by Fraser and Williams. In particular, the type of integration, degree of control and reach of CSEs, and whether they were considered to be 'assistants' or 'experts'.

Full details of the results of the questionnaire are given in Table 1 and an outline of the main differences in perceptions of the roles of crime scene examiners can be seen in figure 2. The largest single category (38%) described the role of CSE exclusively as Evidence Collectors. The variation in perception between the different staff groups was found to be significant (Kruskal Wallis, $p < 0.01$). Of the groups surveyed, scientists had the highest proportion that expressed this view (46%). Furthermore, 36% of CSEs perceived themselves as evidence collectors only.

INSERT TABLE 1

Fifteen per cent of the sample population identified crime scene examiners exclusively as Forensic Investigators and the variation between roles sampled was found to be significant (Kruskal Wallis, $p<0.01$). Notably, not a single senior police officer considered this a suitable description for the role of CSE in contrast to all other respondent groups who gave broadly similar response rates (range 10% - 19%). Thirteen per cent of the sample population identified CSEs exclusively as Specialist Advisor. All other responses selected combinations of the three role descriptions (Evidence Collector, Forensic Investigator, and Specialist Advisor). Notably, CSEs are more often perceived as specialists by police officers (25%) than by forensic scientists (5%). Also, very few CSEs (3%) themselves have identified that they fulfill the role of Specialist Advisors regularly. Approximately 18% of the population identified CSEs as a combination of all three role descriptors.

INSERT FIGURE 2

Although the main role of crime scene examiners was perceived to be collection of evidence from the crime scene, the data also illustrated that almost one-fifth (17.4%) of the sample population recognise that CSEs fulfil a more complex role and should have a more comprehensive input to investigations (see table 1). Almost a third of CSEs sampled (32%) recognised that their roles encompassed two out of three elements or all three elements – evidence collection, forensic investigation and specialist adviser – and provides evidence of some understanding of the complexity and flexibility of their roles. For example, forensic

scientists predominantly perceive crime scene examiners as Evidence Collectors and Forensic Investigators, CSEs perceived themselves as Evidence Collectors and Specialist Advisors, and fingerprint examiners and all police roles perceived crime scene examiners as Forensic Investigators and Specialist Advisors. This provides a much more heterogeneous picture among the population than anticipated. Whether a combination of two categories or all three categories were considered provides some understanding of the complex roles required from CSEs.

In brief, approximately 38% of respondents considered the role of CSE to be exclusively that of an evidence collector. All other respondent (62%) considered the role of CSE to have significant additional dimensions.

Discussion

The investigation of a crime is often a dynamic process involving a number of different actors, organisations and practices. Considering crime scenes as "site[s] where people belonging to different worlds and talking different languages gather" (Mol & Mesman 1996, p.425) can help to explain some of the complexities involved. The roles involved in an investigation often work independently, following their own set processes and procedures, yet must also collaborate effectively. In a 'world' of different hierarchical structures and 'chains of command' (management), the interaction between different individuals requires some recognition of the subsequent boundaries between them (Mol & Mesman 1996). The manner by which professional hierarchies are ingrained into daily practices can be shown to affect decision making and working relationships between different individuals (Mol & Mesman 1996). The effective employment of resources at crime scenes is dependent on the

reciprocal knowledge of investigative personnel as well as the differences in perceived roles and responsibilities. Reciprocal knowledge is knowledge which is not restricted to an individual's own specific role (e.g. prosecutor, investigator, forensic specialist) but also sufficient knowledge about other people's roles involved in an investigation in order to understand how to collaborate productively.

Generally, an individual's role is defined by the combined expectations and perceptions of other individuals in relation to their view of a specific situation (Handy 1993). The differences in the role performance of crime scene examiners and the understanding of the nature of their work have previously been found to affect investigations (Saulsbury et al 1994; ACPO & FSS 1996; Blakey 2000; Bradbury & Feist 2005). What the study reported here has shown is that there is still a widespread view that the role of CSEs remains confined to the collection and packaging of evidential items recovered from a crime scene. This perception undervalues the work carried out by individuals who receive a substantial amount of training, and it clearly displaces them from the centre of the investigative process. Furthermore, it presupposes that forensic evidence is always clearly evident and easily identifiable to simply 'collect and package', and ignores the fact that the process of evidence recovery cannot be separated from other processes such as the disciplined and accoutnacble practices of observation, practical judgement, and the flexible deployment of a variety froms of tacit knowledge.

This study also suggests that particular respondents (e.g. police officers) perceived the role of CSEs to be more complex compared to some other roles (e.g. forensic scientists). This difference can be considered important as investigations often begin with the collaboration between police officers and CSEs at crime scenes where a more complex perception of the responsibilities of crime scene examiners by police roles may be beneficial to the

investigation (ACPO & FSS 1996; Williams 2004). If the significance of the role of CSEs and the value of their work were to be better accepted at the initial stages of the investigation then this has the potential to be carried through the investigation (Bradbury & Feist 2005).

Forensic science starts at the crime scene, with the collection of materials which may be related to an investigation. The importance of effective crime scene examination cannot be overestimated, and even if crime scene examination is predominantly a means of information gathering, the assessment and interpretation of the scene is central (rather than detached) from other forensic disciplines. Crime scene examiners are often expected to assess and prioritise forensic evidence from the crime scene. Therefore, CSEs are often required to determine the best of a number of fingermarks to collect, so as to provide the highest chance of obtaining a good quality lift for analysis which may provide a better chance of identification (Bond & Sheridan 2007; Adderley & Bond 2008). The more complex the crime scene, the harder this role may become and the more the investigation ability and specialist technical skill of the crime scene examiner is required (Robertson 2012). Crime scene examiners are an integral part of the investigative process, however they appear underutilised and restrained by their current perceived roles (as technical assistants or evidence collectors only).

Earlier re-designations of Scenes of Crimes Officers (SOCOs) as CSIs "to emphasise the role and reinforce the principle that the personnel are full members of the investigative team" (Blakey 2000) have failed to impact on perceptions of their role. If CSEs were more widely accepted as members of the investigative team and the variations in role perception of the role of crime scene examiners (by crime scene examiners themselves as well as others) were addressed, significant improvements in the relationships between investigative organisations may be possible (Fraser 2000; Williams 2004; Bradbury & Feist 2005). Crime scene

examiners that assist in the "investigative decision making process", contribute to investigations through the "provision of advice" and intelligence, and effectively "interact and work as a team" are able to contribute to police enquiries much more effectively (SPSA 2010). Current limitations in their perceived roles in volume crime investigations means the roles of crime scene examiners have become routinised and their training and knowledge not fully exploited.

Current understandings of the effect of these limitations are weakened by the relative absence of research which accounts for the ways in which "competent crime scene examination is actually accomplished" and how CSEs use a "repertoire of observational skills, manual competences, logical inferences, technical understandings and other forms of situated practice" in investigations to carry out their role (Williams 2004, p.3). Therefore, not only is there variation in how CSEs are used in different forces, an unknown amount of variation possibly exists between scene examiners themselves in how they go about doing their job as well as the utility of the information derived from their work (Williams 2004). Ribaux et al. (2010) suggest the CSE work at volume crime investigation involves "a greater variety of, often tacit, strategies and practices" (p. 67) compared to more formalised major crime investigations.

The study by Williams (2004) indicated that the forces with a high level of CSE resources per crime rate predominantly followed the 'technical assistant' model proposed, whereas forces with lower resource levels had to use better systems of "enhancement and monitoring" and were associated with the 'expert collaborator' model (Williams 2004). This indicates that there may be some correlation between the individual workload, the level of demand, and the local crime rate which can determine how crime scene examiners are perceived and how they are used. Such correlations were not available from the data gathered in Scotland.

It is intuitively obvious that CSEs who are knowledgeable, well-informed, and respected are able better to be utilised in a criminal investigation (ACPO & FSS 1996; Williams 2004). However, the perceptions of others influence the role that CSEs themselves expect to fulfil and therefore condition their actions. CSEs are expected to "interact and work as a team with specialist personnel from police, other organisations and specialist suppliers" (SPSA 2010). Positive relationships, mutual respect and understanding of the expertise of each actor in the investigation can provide a more effective and efficient process as the most is gained from everyone's roles.

Organisational differences between the personnel involved in the investigation of a crime scene can also play an important role. Police culture has undergone a number of changes and modern police forces now incorporate new technologies, and a variety of policing styles and models, e.g. community policing, problem-oriented policing (Loftus 2009). However, police continue to be predominantly interested in the outcome (or end-means) of an investigation (i.e. the arrest, charging and detection) (Ericson & Haggerty 1997). Furthermore, despite these recent developments in most police organisations a 'command and control' approach remains, and authority and power derive from formal hierarchical structures [for discussion and explanation of police culture see for example: Reuss-Ianni & Ianni 1983; Herbert 1998; Reiner 2000; Chan 2001].

Forensic science laboratories on the other hand, are more readily characterised as a 'process culture' focused on the way something is done; that is they are interested in the steps required to accurately analyse evidence (Chan 2001; Glomseth *et al*. 2007; Williams 2007). Crime scene examiners remain situated between these two cultures; not fulfilling a police role, nor having the knowledge of forensic scientists.

The performance indicators used for CSEs have historically focused on the number of scenes attended, the number of items collected and submitted, etc. and less on the value of the evidence for furthering investigations and the overall investigative outcomes (Tilley & Ford 1996; Williams 2004; Adderley et al. 2007; SWIM 2007). There is no information easily available which indicates how forensic evidence is utilised in investigations and therefore how their work of CSEs influences investigations. Therefore, the lack of focus on the value of evidence, as well as the lack of feedback on the outcomes of investigations to crime scene examiners provides little incentive for CSEs to get more involved in the investigation (beyond the stage of evidence collection) of volume crimes. Crime scene examiners (and other forensic staff) rarely know the contribution they may have made towards an investigation.

Conclusions

One of the central goals of the ACPO and FSS (1996) report 'Using Forensic Science Effectively' was to realise the potential of crime scene examiners as expert collaborators in investigation rather than technical assistants to other staff formally designated as investigators. This study shows that this realisation has yet to take place. This paper has begun to address the variation in role perception of the role of CSEs. If the understanding of the role expectations are not clearly defined or mirror the perceived requirements by the individuals undertaking the work, misperceived opinions of the quality, value and type of work carried out by CSEs can limit the efficiency and effectiveness of an investigation.

The data generated by this study suggest that the role of crime scene examiners is to a significant extent still perceived as being restricted to the collection of evidence. Most

importantly, many CSEs also perceive their own roles as 'evidence collector' only. The suggestion made some years ago by HMIC (Blakey 2000) – that that scene examination personnel ought to be investigators in their own right – seems to have gone unnoticed in Scotland, and it is likely that the reluctance to recognise other significant elements of the role limits potential contributions to the investigation. The findings of this study agree with work from Australia which stated there was a simplistic perception of the roles and jobs of CSEs; they had been viewed as "pickers, packers and posters" (Robertson 2004, p.402). In both studies, subjects failed to recognise the complexity of the tasks and responsibilities.

Variations in the role of CSEs and the relationship between the perception of their responsibilities and the outcomes of their work have been identified as one of the main areas of forensic science provision that requires more research (Bradbury & Feist 2005). It is our view that CSEs should be used to maximise the provision of information and/or intelligence for use in an investigation by others involved. Crime scene examiner role requirements need to be more clearly defined, levels of training standardised and the influence on the investigative process properly documented (Touche Ross 1987, ACPO & FSS 1996). Without detailed consideration of the role and practices of crime scene examiners in the investigation of crimes, their contribution and significance to criminal investigations will continue to be underestimated.

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