Professionalism in Crime Scene Examination: Recruitment Strategies Using the Seven Key Attributes of Top Crime Scene Examiners

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Abstract *Hiring well is crucial for law enforcement/forensic science agencies. Recruiting high-caliber forensic personnel, such as effective crime scene examiners (CSEs), is no exception. This is the second of a series on professionalism in CSEs. The first paper identified the key attributes that set top CSEs apart from their peers. Given the importance placed on accurate crime scene processing and having identified what attributes underpin top CSEs, the next stage is to consider how to recruit personnel with the potential to become top-performing CSEs. The aim of this paper is to provide law enforcement and forensic science agencies with evidence-based recruitment guidelines that could assist them in selecting personnel with the potential to excel in their roles. In this paper, a multi-source recruitment strategy is discussed that utilizes focused psychometric assessment, targeted selection criteria, key interview questions, medical assessment, and collection of information from referees.*

Keywords Recruitment forensic personnel, forensic management, crime scene examiners, leadership, career development

Introduction

Processing a crime scene is considered to be one of the most critical aspects of an effective criminal investigation. The crime scene is where good forensic science begins and, when a scene is processed well, accurate and high-quality evidence can be gathered (Robertson 1989). Inadequately managed scenes increase the risk of ineffective investigations, of poorer quality evidence collected, or vital evidence missed (Julian, Kelty, & Robertson 2012). Many miscarriages of justice leading to wrongful imprisonments in Australia (Vincent 2010; R v Stafford 2009), the United States (Rossmo 2009; Findley 2010), the United Kingdom (Sangha, Roach, & Moles 2010), and Canada (Kaufman 1998) have been associated with ineffectively processed or managed crime scenes.

Several in-depth reports from the United States (the National Academies of Sciences [NAS] report 2009) and the United Kingdom (Scientific Work Improvement Model [SWIM] report, BHO: 2007) have highlighted that some CSEs noticeably outperform their peers in the quality of their work. The SWIM report noted that high-performing CSEs attend more scenes and gather higher quality traces that are more likely to be successfully processed in laboratories and more likely to lead to positive identifications. The NAS (2009) report noted similar observations in that there are wide differences in the accuracy of CSEs throughout the United States. Higher performance of CSEs allows forensic science to contribute to more positive justice outcomes and leave fewer cases unsolved. However, what neither report explained was why some CSEs excel (Kelty & Julian 2010). Recent research has identified a cluster of seven key critical skills that set top-performing CSEs (those who attend major crime scenes) apart from their peers. These skills were: cognitive abilities, knowledge base, life experience, work orientation, professionalism/leadership, approach to life, and communication skills. These skills were identified regardless of whether the CSE was a police or civilian CSE (Kelty, Julian, & Robertson 2012). The next phase of this work was to use the identified critical skills in aiding recruitment; this is the subject of this current paper.[1]

Why Organizations Should Invest More Resources into Hiring High-Caliber CSEs

There is an ongoing debate about whether crime scene examination should be considered a scientific endeavor

to be carried out by scientific practitioners or whether it is a technical task that can be carried out by police officers or civilian staff with some limited science knowledge (refer especially to Crispino 2007; Harrison 2006; Robertson 1989). Whether to invest resources in recruitment practices and who an organization should employ is a direct consequence of where an organization stands on this debate. One aspect of whether CSEs should be technicians or science professionals is the argument that not all crime scenes are complex enough to warrant sending top-performing scientist CSEs (Harrison 2006). However, the SWIM report clearly noted that the better performing CSEs who attend volume crime scenes were far more efficient and effective for both the subsequent police investigation and in the lab because they collected higher quality samples that were analyzable. Further, recent literature detailed the advantages—especially for complex volume and major crime scenes, or where law enforcement agencies are involved in forensic intelligence and crime mapping (Ribaux et al. 2010)—of the need to send high-caliber CSEs to such scenes in order for high-quality work to aid investigations and lead to just court outcomes (Julian et al. 2012). It would seem from the literature published over the past five years that employing high-caliber CSEs makes sense from both an efficient resource and justice perspective.

Moreover, research by Kelty and Gordon (2012) detailed the high attrition rates for CSEs. In some law enforcement agencies, attrition rates of 50% over a three-year period have been reported. Included in these rates are a high percentage of CSEs reporting long-term psychological injury due to their exposure to crime scenes. Many of these CSEs have taken extended stress leave or resigned. Policing has long been regarded as a stressful occupation with high attrition and burnout rates among serving members (Anshel 2000; Hess & Orthmann 2012). It has been reported that up to 20% of police officers have the potential to develop post-traumatic stress resulting from their occupation (Paton et al. 2009). Stress and high turnover have been problematic in emergency management personnel (e.g., fire fighters and paramedics) who, like their police counterparts, face repetitive exposure to death, trauma, and accident scenes (Regehr et al. 2002; Regehr & Bober 2005). Given the stressful nature of fire fighting, fire departments have increased recruitment expenditure over the past few decades and have developed targeted and in-depth hiring practices with the aim of employing the best people most likely to function well in this stressful role.

Furthermore, employing poor-performing CSEs (poor skills, or those less diligent in their roles) has a direct impact on the morale and occupational stress levels of high-performing CSEs. Poor CSEs place greater demands on colleagues because the work that needs to be done at scenes is not equally shared. Often at major scenes two or more CSEs attend. When two CSEs at the scene have different performance levels (not recruits or CSEs in training being mentored) but the same number of years of work experience, the responsibility is not evenly shared. The better CSE not only assumes the management of the scene but also has to supervise and manage the work of the poorer CSE (Kelty et al. 2012).

Finally, hiring well is a challenge for most law enforcement agencies (Dempsey & Frost 2010). One of the challenges has been increased demands on agencies to limit their legal liability for poor employment practices (Hess & Orthmann 2012). There has been a growing tendency over the past few decades, especially in the United States, for agencies to become legally liable for what the courts have decided are "negligent hiring practices," such as the failure to carry out adequate selection processes or in-depth criminal history checks (Hess & Orthmann 2012). Hiring forensic personnel is no exception to this. This challenge can be overcome, according to Heames and Heames (2010), once a talent inventory has been developed and is used in the recruitment process.[2]

It appears that employing top performers in the crime scene area has four distinct benefits: the potential to lower high attrition rates by hiring staff that are potentially more stress resilient; the potential to employ staff with the scientific knowledge and ability to collect higher quality evidence from crime scenes that in turn will reduce the risk of miscarriages of justice; the removal of additional occupational stress for existing top-performer CSEs; and last, a reduction in the risk of organizational liability for poor recruitment practices.

Aims of the Current Study

Given the consequences for criminal justice outcomes of poor-quality crime scene work, it makes sound business sense to put resources into employing potentially top-performing CSEs rather than poor or average performers. The aim of developing the recruitment guidelines overviewed in this paper is to provide police organizations and forensic science agencies with a set of guidelines that could assist them in selecting potential top-performing CSEs. Top-performing and high-caliber CSEs can be defined as CSEs who will achieve superior results in most or all aspects of their work compared with the majority of CSEs in the same role. Furthermore, if police departments or forensic science departments/organizations want a team of high-caliber CSEs then, according to Herrenkohl (2010), it is beneficial to desist from trying to turn poor performers into top performers and to commit more time to finding, training, and developing top performers from the beginning. The guidelines below were specifically designed to assist in identifying the critical skills for top CSE performance in job applicants.

Table 1.   Critical Skills and Recruitment Strategy by Skill Category for Top-Performing CSEs

Skill category[a]	Critical skills[b]	Recruitment method
Cognitive Abilities	Lateral/critical/creative thinking	Psychometric assessment
	Multi-tasking abilities, short-/long-term planning skills	Psychometric assessment
	High-level consequential thinking	Psychometric assessment
Knowledge base	University degree	Essential selection criteria
	Legal, police culture/investigation knowledge	Essential selection criteria
	Sound knowledge of scientific principles	Direct interview question
Experience	Crime scene to court (policing/justice experience) Worked in highly charged situations	Essential selection criteria
	Maturity and life experiences (not closeted)	Essential selection criteria
	Crime scene to court (policing/justice experience) Worked in highly charged situations	Interview questions
Work orientation	Good time-management	Confirmed by referees
	Genuine interest/dedication to role	Selection criteria/interview questions
	Self-motivated, persistent, and results-driven	Psychometric assessment
Communication skills	Active listeners with good negotiation skills	Confirmed by referees
	Inclusive and team-orientated	Confirmed by prior employer
	High level written and verbal skills	Selection criteria/scoring of application
Professional demeanour (Leadership)	Unassuming and modest, respected	Confirmed by referees
	Potential for leadership	Psychometric assessment
Approach to life	Fitness and health orientation	Medical assessment
	Consistent and stress resilient	Psychometric assessment

Notes: [a, b]Critical skills categories and skills by category as identified in Kelty, Julian and Robertson (2012).

The Recruitment Guidelines

The first stage was to determine how each of the seven critical skill sets could be measured during recruitment. In Table 1, each of the critical skills are presented with details as to how each skill could be assessed or measured.

As can be seen in Table 1, the strategy proposed is multi-source, gathering information from four main sources. These are: psychometric assessment; targeted and specific selection criteria; internal and external referees; and medical and fitness assessments. Although four main sources are suggested, in this paper we concentrate on three and do not focus on external and internal referees.

Psychometric Testing

Psychometric testing (also known as psychological testing, aptitude assessment, or mental measurement) is an assessment tool that can aid in the selection of employees. A standardized psychometric test is a task (e.g., a spatial rotational puzzle or a questionnaire) or set of tasks given under set conditions. Standardized tests are designed, tested, and validated to measure a range of aptitudes, abilities, and attitudes including verbal, special, numerical and abstract reasoning, behavioral traits, stress reactions, personality, leadership, and integrity (Boyle, Saklofske &

Matthews 2012). Psychometric testing has been an essential component of recruitment within law enforcement agencies in the United States (Dempsey & Frost 2010), the United Kingdom (Police Oracle 2012), and in Australia (Australian Federal Police [AFP] 2012). One advantage of carrying out psychometric assessment as part of a recruitment strategy is to improve employee retention because accurate assessment can assist in matching prospective employees with the roles and workplaces in which they will excel. Furthermore, by using better employee/workplace matching both the financial and personal costs associated with poor recruitment for organizations and employees can be avoided (Edenborough 2005).

For psychometric assessment to be useful, selecting the right test is crucial. The tests detailed below are presented under the skill category they measure as outlined in Table 1. They represent examples of empirically valid psychological tests that could assist in the assessment of several key attributes for potential top CSEs. As such this list is not comprehensive and the selection of appropriate tests should rest with each organization.[3] Two types of tests are presented below. First are the tests published and in the public domain, which means they are free to be used and can be administered by anyone, such as an HR officer. However, although the tests are in the public domain, their validity and reliability in measuring a given aptitude can only be assured if the tests are

administered and scored according to the guidelines provided in the articles in which they are published (or in related publications). Further, it is imperative that a person with expertise and knowledge in psychometric testing then interpret the scores from the completed tests. Second, are the tests licensed and administrable only by a registered psychologist? However, applicants can complete many of the tests in the second category during an online assessment and the test results emailed back to the organization by the test developer for a small fee; this eliminates the need for a registered psychologist.[4]

Cognitive abilities (e.g., mental planning, spatial, mechanical, and abstract reasoning) can be measured with the following aptitude tests. First, Raven's Advanced Progressive Matrices (APM: Raven, Raven, & Court 2000) is a measure of high-level observation skills, clear thinking ability, intellectual capacity, and intellectual efficiency. The APM assessment can be accessed online or can be purchased in paper booklet format. Both formats are available from the test publisher, Pearson Assessments.[4] Second is the Watson-Glaser II Critical Thinking Appraisal (W-G II: Watson & Glaser 2009). The revised W-G II measures cognitive ability in three ways: recognition of assumptions made in ideas, statements, and strategies; evaluation of arguments or information that is presented; and drawing appropriate conclusions from evidence available. The test draws together inference, deduction, and interpretation skills. The W-G II is available as an online assessment or in booklet format.[4]

Professional demeanor can be measured using the California Psychological Inventory-260 (CPI-260; Gough & Bradley 2002). According to research by Miller, Watkins, and Webb (2009), the CPI-260 has the ability to measure management and leadership qualities in potential law enforcement professionals, pre- and post-leadership training, especially in the areas of self-management, organizational capabilities, teamwork, and sustaining vision.

Work orientation can be measured using the Action Control Scale (ACS-90; Diefendorff, Hall, Lord, & Strean 2000). The ACS-90 is a self-report scale that assesses a person's ability to make timely decisions, commit to a course of action, avoid procrastination, persist in tasks despite setbacks, and handle multiple competing demands. The test has three distinct subscales measuring preoccupation, hesitation, and volatility. The ACS-90 is free to use and was published in the public domain (refer Diefendorff et al, 2000).

Consistence and stress resilience can be measured in two ways. First, stress reactions can be measured with one of the subscales of the DASS-21 (Lovibond & Lovibond, 1995). The stress subscale was developed to measure chronic nonspecific arousal, difficulty in relaxing, nervous arousal, being easily upset/agitated, irritability, and over-reactive to events. Complementary to the DASS-21, the use of personal mastery and competence to deal effectively with a variety of stressful situations can be assessed with the widely used General Self-Efficacy Scale Revised (GSE; Schwarzer & Jerusalem 1995). The DASS-21 is available by purchasing the administration manual (Lovibond & Lovibond, 1995). The GSE is in the public domain (see Schwarzer & Jerusalem 1995) and can be administered in paper and pencil format free of charge.

Job Selection/Application Criteria and Interview Questions

A vital step in hiring well is developing a detailed written application package, including highly specific selection criteria (e.g., person specifications, basic, and essential qualifications) that target the attributes desired. Between

Table 2. Essential and Desirable Selection Criteria for the Recruitment of Top Performing CSEs

Selection Criteria no.	Essential	Desirable (but not essential)
1. Knowledge base	a) A bachelor's degree[i]	
2. Work Experience	a) Demonstrated policing and/or criminal justice experience) b) Demonstrated knowledge of the investigative process	a) Police or emergency management background/experience in managing highly charged environments
3. Genuine interest in role	a) Knowledge of the role and detailed expectations of conditions and exposure to serious crime scenes	
4. Communication skills	a) Demonstrated high-level assertive abilities	a) High-level negotiation skills
5. Stress management	b) Demonstrated verbal and report writing abilities a) Ability to deal with highly charged environments and extended hours (at crime scenes) when required.	b) Presentation of evidence in court a) Prior experience with shift work

[i]The bachelor's degree is not limited to forensic science or science disciplines per se, please refer endnote 5.

Table 3. Example Interview Questions for the Recruitment of Top-Performing CSEs

1. Describe for me how you have used the scientific method in your work.
2. How have you, or would you, use the scientific method at a crime scene?
3. Describe for me a time when you were self-motivated and persistent at a task. The question can be expanded by asking, what was the situation, what was the result, and why did you persist?
4. What was your experience or what do you expect a serious [e.g., an arson or homicide] crime scene [or post-mortem] was/would be like?
5. Why do you think we are asking for assertive skills, what do you understand by being assertive?
Please describe being assertive by a recent example.

four and six essential criteria are considered optimal, and three to four desired but not essential criteria can also be added (Yeung 2009). Desirable qualities represent attributes that would be advantageous at the time of recruitment but are not essential, and good employees can be trained in these aspects. The selection criteria suggested below was adapted from Yeung's (2009) guidelines and was developed to target the specific skills identified in Table 1. To assess these skills using these guidelines would require that applicants are asked to submit a written application and that each skill is addressed on a separate page. Further, written skills can be assessed formally by scoring the written application. The example selection criteria are presented in Table 2.

The next stage is the development of focused interview questions. As the skill set desired is known, the most optimal form of questioning is a mix of standard recruitment questions and behavioral questions (Hoevemeyer 2006). The mixed-format interview would allow potential CSEs to describe how they have or could overcome challenges in general (e.g., "how did you overcome that hurdle"? "If you were faced with this crime scene, what could you do"?). In Table 3, standard and behavior-based questions for recruiting potential high-caliber CSEs are presented. These questions are illustrative of specific type of questions that need to be asked to hone in on the specific skills desired in applicants. It is optimal that additional questions be asked depending on the specifics of the job and the organization.[5]

Medical Assessment

One aspect of top performance in crime scene work identified by Kelty et al. (2012) was a fitness and health approach to life. This was seen by the top CSEs interviewed as vital to their ability to not only excel in their role as CSEs but also being active was seen as way to ensure work/life balance, which in turn led to enhanced personal stress management. A substantial body of research notes that burnout through occupational stress (such as exposure to crime scenes) is a major problem underpinning turnover and stress leave in policing organizations (Anshel 2000) and that engaging in physical activity and/or active hobbies is one aspect of self stress-management (Folkman 1984), especially for CSEs (Kelty & Gordon 2012).

Given the importance placed on fitness and health, this recruitment strategy recommends that all CSE recruits (and importantly those personnel transferred from general police duties or other roles within law enforcement/forensic science agencies) be assessed medically to include at a minimum the standard requirements often required by law enforcement agencies.[6] In addition, other fitness and medical requirements were found to be important in the Kelty et al. (2012) study. These include the ability to kneel for long periods without pain, good eyesight, and ability to lift heavy objects (namely furniture) safely and using correct techniques. These assessments could be carried out during a standard medical with a general practitioner/doctor and also at an assessment centre.

Summary and Conclusion

Hiring potential top-performing crime scene examiners has far-reaching implications for the effective functioning of the justice system and efficient use of time and resources within law enforcement/forensic science agencies. Given the importance placed on hiring high-quality crime scene personnel, the aim of this paper was to present some initial guidelines on how-quality applicants with potential to excel could be identified.

The recruitment guidelines presented are in the form of a multi-source process utilizing three main sources of information. These were: psychometric assessment measuring a number of different cognitive abilities, leadership potential, and stress reaction/tolerance; targeted written selection criteria and focused standard and behavioral interview questions; and a thorough medical assessment.

The essence of this recruitment strategy is to use the identified critical skills to fill CSE vacancies in law enforcement agencies or forensic science agencies with people who have the potential to excel. The strategy is not developed to recruit personnel with base-level entry technical skills.

Of note, using this strategy does not imply that post-employment training is redundant or that employing people with high potential to excel means they need less training than their peers. Resources used in good recruitment do not reduce the need for career development and training. Rather it could be argued that the more resources

used in the initial hiring of the best people available, complemented by effective and appropriate training, the more likely it is that a team of top-performing CSEs and higher returns on recruitment and training investment will emerge (Herrenkohl 2010).

Finally, the strategies discussed may not fit every organization, and it is vital that recruiters confirm that the strategy complies with any legal requirements. For example, in New South Wales, Australia, the employment of police officers is governed by legislation stipulating the conditions and terms of an employment contract (e.g. Police Act, 1990 (NSW) s65, s66, and s67). Although such legislation may not necessarily stipulate exactly how an interview process should be conducted, it is essential that the guidelines in this paper be used in accordance with legislation or any organizational/enterprise agreements made under law.

Endnotes

1. This is the second of a related set of papers on professionalism in crime scene examination. The first paper identified the critical skills of top-performing CSEs. In the next two papers some fundamental aspects that underpin professionalization of crime scene examination will be explored. For example, after recruiting crime scene personnel with potential, issues surrounding professional career development and methods for how police/forensic science agencies can retain their top-performing personnel will be explored. Furthermore, a commentary on what it could mean to be a professional crime scene examiner, including an assessment of formal accreditation and professional development and standards, will be discussed.

2. In this paper, the terms *critical skills* and *key attributes* are synonymous with a talent inventory. The term *crime scene examiner* (CSE) is used to encompass crime scene officer, forensic science officer, scenes of crime officer, and both civilian personnel and police officers who carry out crime scene work.

3. The psychometric tests discussed in this paper do not represent a comprehensive test battery. For a complete guide to validated psychological aptitude tests, please refer to the Buros Institute of Mental Measurement (http://buros. unl.edu/buros/jsp/search.jsp).

4. The Ravens Advanced Progressive Matrices and the Watson-Glaser II Critical Thinking Appraisal are available in both paper booklet and online format from the test distributer, Pearson Assessments/Psychological Corporation. Refer http://www.pearsonassessments.com/pai/).

5. It is beyond the scope of this paper to provide a full set of questions or interview format. More comprehensive discussions on these issues can be found in Herrenkohl (2010), Hoevemeyer (2006), and Yeung (2009).

6. CSEs in different countries and in different jurisdictions are either civilian personnel employed directly as CSEs or were initially sworn police officers who transferred into the crime scene department. Most CSEs regardless of sworn or civilian status undertake some form of medical assessment upon initial employment. For example, to join the Australian Federal Police, applicants must pass three types of medical assessment: initial resting heart rate and blood pressure assessments; strength tests, including grip and abdominal strength; and aerobic performance including the Shuttle Run Test (Beep Test) (AFP 2012). Similar assessments are carried out in U.S. state police departments (Dempsey & Frost 2010) and across England and Wales (Police Oracle 2012).

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