

# FORENSIC ARCHAEOLOGY

THE APPLICATION OF COMPARATIVE  
EXCAVATION METHODS AND  
RECORDING SYSTEMS

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*This book is dedicated to family and friends,  
my champions through it all.*



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# Chapter 1 Introduction

Forensic archaeology is a relatively new sub-discipline of archaeology that emerged out of the potential to apply systematic archaeological excavation and recording to the investigation and research of crime scenes and the recovery of human remains deposited through clandestine activities (Hunter *et al.* 1994: 758). In its developed form it can be defined as a sub-discipline of archaeology that involves the application of archaeological techniques and theories to assist in the process of a forensic investigation by providing evidence for use in legal proceedings (Darvill 2008: 162). Over the past decade this sub-discipline has gained credibility internationally, through the realisation that the utilisation of archaeologists in forensic investigations resulted in an improved rate of evidence recovery and documentation (Crist 2001; Davenport and Harrison 2011; Morse *et al.* 1976; Sigler-Eisenberg 1985; Sonderman 2001). Consequently, forensic archaeologists are increasingly requested to participate in crime scene investigations both nationally and internationally, the majority of which revolve around the recovery of human remains from earth-cut graves.

Existing forensic archaeological literature is dominated by papers and reports that have been written by practitioners both in the academic and commercial sectors of the discipline. These have discussed the sub-field's development and the application of forensic archaeological techniques to various types and stages of forensic investigation, in particular, the excavation and recording of single and mass burials (Blau 2004; Blau 2005; Blau and Skinner 2005; Blau and Ubelaker 2009; Connor 2007; Ferllini 2003; Haglund 2001; Haglund *et al.* 2001; Hunter and Cox 2005; Oakley 2005; Owsley 2001; Schultz and Dupras 2008; Vanezis 1999). Whilst such publications are mostly of the same opinion regarding the value of forensic archaeology in domestic and international contexts, the question of forensic excavation and recording methodology is more divided, with scholars advocating different approaches to the examination of similar types of feature such as pits, ditches, and graves.

The greatest divergence relates to the excavation of single or mass graves. Some practitioners advocate various forms of the Arbitrary Level Excavation method (Bass and Birkby 1978; Brooks and Brooks 1984; Burns 2006; Connor 2007; Haglund *et al.* 2001; Morse *et al.* 1983; Oakley 2005; Pickering and Bachman 1997; Ruwanpura *et al.* 2006; Spennemann and Franke 1995; Stover and Ryan 2001; Ubelaker 1989). Other practitioners suggest that a form of Block Excavation be used (Larson *et al.* 2011). In contrast, some scholars state that graves should be excavated using a form of sectioning, suggesting that either the Demirant or Quadrant Excavation methods be used (Congram 2008; Dupras *et al.* 2006; Hunter 2009; Hunter and Cox 2005; Hunter *et al.* 2013; Ruffell *et al.* 2009). Alternatively, Wolfe Steadman *et al.* (2009) advocate a Vertical Slice Excavation method. Many other academics recommend that graves should be excavated using the Stratigraphic Excavation method (Blau 2005; Blau and Skinner 2005; Cheetham and Hanson 2009; Connor and Scott 2001; Hanson 2004; Hochrein 2002; Hunter *et al.* 2001; Jessee and Skinner 2005; Nuzzolese and Borrini 2010; Powell *et al.* 1997; Schultz and Dupras 2008; Skinner and Sterenberg 2005; Skinner *et al.* 2003).

These divergences emphasise the lack of standardisation in forensic archaeological practice, a problem that can be attributed to the fact that forensic archaeological practitioners have uncritically adopted techniques, principles, and practices from the wider and long-established sub-discipline of field archaeology (Drewett 1999; Hunter *et al.* 1996).

In the field of archaeology, approaches to archaeological excavation and recording vary greatly from country to country, and have evolved to their current state according to the practices advocated by practitioners and professional bodies in their country of origin, and the inherited traditions present in each. Consequently, different excavation methods and recording systems are used by different archaeological practitioners in accordance with their individual preferences. These preferences, however, are largely

determined by the site types from which an archaeological practitioner has gained their academic training and experience (Carver 2009; Carver 2011: 107). Thus, if an archaeologist had gained their academic qualifications and field experience in North America, working primarily on prehistoric burial sites lacking stratigraphy, they would be more likely to advocate an Arbitrary Level method of excavation and a Unit Level method of recording (Brooks and Brooks 1984; Drewett 2000a-e; Hester 1997; Hochrein 1997; Joukowsky 1980; Pallis 1956; Pickering and Bachman 1997; Powell *et al.* 1997; Ubelaker 1989; Wheeler 1954; Willey and Sabloff 1980). Whereas, if an archaeologist had gained their academic qualifications and field experience in the United Kingdom since 1980, working primarily on urban cemetery sites with complex stratigraphy, they would be more likely to advocate a Stratigraphic method of excavation and a Single Context method of recording (Balme and Paterson 2006; Barker 1993; Hanson 2004; Harris 1979; Hester 1997; Pallis 1956; Praetzellis 1993; Roskams 2001; Wheeler 1954).

However, the adoption of a variety of different methodological approaches to the excavation and recording of single or mass graves from field archaeology into forensic archaeological practice poses a problem. The primary aim of forensic archaeological investigations is the provision of evidence to legal proceedings. Therefore, when archaeological investigations are conducted within a forensic context the methods utilised, and the evidence retrieved as a consequence of the investigation are held accountable to the admissibility regulations and the legal processes upheld by the courts in the country in which the investigation is being conducted and/or tried.

In general, the legal processes and admissibility regulations state that any techniques used during the course of a forensic investigation must have been subjected to empirical testing, peer review, have known error rates, have standards controlling their operation, and be widely accepted amongst the academic community from which they originate (Edmond 2010; Edwards 2009; Glancy and Bradford 2007; Hanzlick 2007; Klinker 2009; NAS Report 2009; Pepper 2005; Robertson 2009; Robertson 2010; Selby 2010; The Law Commission 2009; The Law Commission 2011). Therefore, if an archaeologist is to be accepted as an expert witness by legal practitioners, and the evidence retrieved as a consequence of an archaeological investigation is to be accepted by a court, the archaeologist must be able to demonstrate that the methods utilised during the course of the forensic archaeological investigation adhered to a widely accepted and tested archaeological investigatory process (Hunter and Knupfer 1996: 37). However, to date, no such forensic archaeological investigatory process has been established. Furthermore, no substantial empirical testing has been undertaken regarding archaeological excavation methods or recording systems, a point which was highlighted in a recent report published by the 'Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council' (NAS Report 2009). As a consequence, much of the work undertaken through excavation by forensic archaeologists does not currently meet the admissibility regulations and legal requirements of the international court systems.

It follows that for the sub-field of forensic archaeology to continue to maintain credibility as a forensic discipline, it is necessary for the various archaeological excavation methods and recording systems advocated by practitioners within the archaeological literature to be empirically tested, error rates to be established, and a peer reviewed protocol to be formulated. This will ensure that evidence gathered as a consequence of a forensic archaeologist's participation within a forensic investigation will not be dismissed from future court proceedings as inadmissible.

**Research Question**

Against this background, the central question at the heart of this research is: do recognised archaeological excavation methods and recording systems used to recover evidence in forensic cases satisfy the legal tests of admissibility currently applied in the international courts?

**Aim of the Research**

The aim of this research is to determine which, if any, of the various excavation methods and recording systems currently used in the United Kingdom, Ireland, Australasia and North America fulfil criteria for legal acceptance and best meet the needs of forensic archaeology. Burials and the recovery of human remains are the focus of attention in this book as these represent the majority of work in this sub-field, although the research has wider implications.

**Objectives of the Research**

Experimental studies conducted by Chilcott and Deetz (1964), Evis (2009), Pelling (2008), Roberts (2009), Scherr (2009) and Tuller and Đurić (2006) compared archaeological excavation methods to determine the impact that different methodological approaches had upon the retrieval of artefacts and the formulation of interpretations regarding an archaeological feature's formation process. In order to expand upon these experimental studies, and to establish the most effective archaeological excavation methods and recording systems to use during forensic archaeological investigations the following objectives were pursued:

To review, analyse and compare published academic literature and published/unpublished archaeological manuals/guidelines.

To identify the origins, development and current use of archaeological excavation methods and recording systems in the United Kingdom, Ireland, Australasia and North America.

To conduct interviews with field and academic archaeologists in order to evaluate how they excavate, and why and when they choose to use particular excavation methods and recording systems.

To create a controlled experiment through which differing archaeological excavation methods, recording systems and the affect of archaeological experience can be directly compared, contrasted and measured.

To examine the affect that factors such as archaeological excavation method, archaeological recording system, and archaeological experience have on archaeological investigations, including: the quality and quantity of evidence recovered, and the consistency of interpretation(s) regarding the formation process of the site.