

Book review – Forensic Science: Current Issues, Future Directions

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Forensic Science: Current Issues, Future Directions

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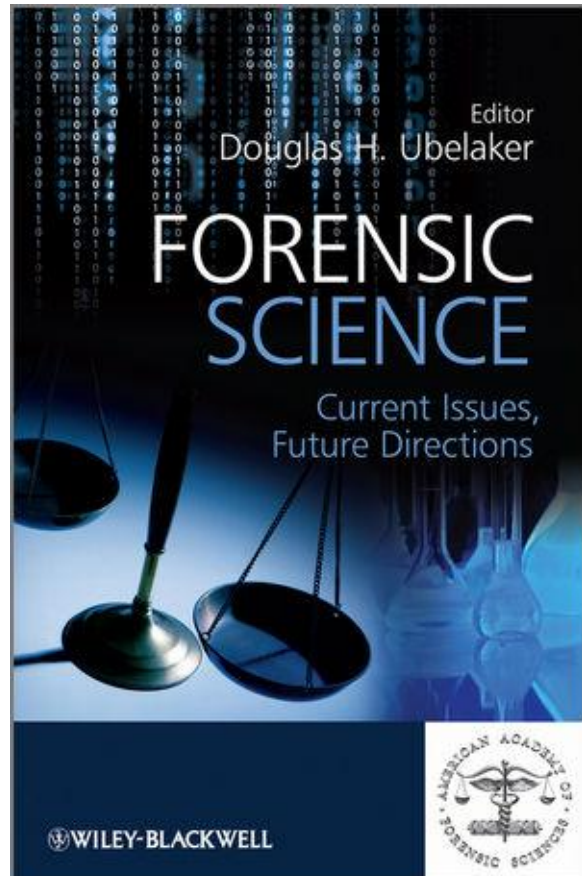
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This book consists of 15 chapters, each one covering a forensic specialism as covered by the American Academy of Forensic Science (AAFS) reflecting the structure of the AAFS into the eleven areas of the forensic sciences, however not all forensic applications are addressed.

Forensic science represents the application of knowledge and methodology in various scientific disciplines towards the resolution of legal issues over the years. The broader forensic science community has discussed and debated a variety of issues related to the quality of current forensic practice focusing on objectivity, accreditation, certification, reliability, error analysis and the need for research.

The aim of the book is addressed in chapter 1 - the global view of the central issues within forensic science. The editor continues with an outlines of the guidelines provided to the subsequent authors of each chapter. Each chapter should address origin and historical development of the forensic science,

including early pioneers and main contributors of the topic's specific history. Key issues and how they are being addressed, emphasis on scientific development and also accreditation, certification, objectivity and training. The authors were also asked to consider future direction of their chosen field, including major research. Chapter 2 focuses on general forensics, this section covers 18 sub-disciplines but only three are discussed in this chapter, they include: medicolegal death investigation, crime scene investigation and forensic nursing. Medicolegal death investigation can be defined as any sudden unexpected, unexplained suspicious or violent death. It goes on to describe the qualification of medical examiners (USA). Medicolegal death investigation began in China in 1618. With the term 'coroner' was brought back to America by English Colonists in the 1600s. Coroners are responsible for holding inquests into deaths of non-natural causes. This chapter outlines the differences between the coroner in the USA and UK and other countries just as Japan. Some of the key issues discussed include inconsistent and fragmented systems, low budgets, and qualifications for American coroners remains obscure, lack of training and resources, and general lack of research. Crime scene investigation (CSI) this is a diverse field and this section takes us through what a crime scene is and what the correct protocol consists of. We are reminded of the 'CSI Effect' and with this in mind, it is easy to think that CSI was a relatively new field, but its origins can be traced back to 1248, where the Chinese recognised the importance of post-mortem examinations, but also the likes of Sir Robert Peel and Allan Pinkerton were instrumental in developing investigation practice. The key issues are discussed but the lack of standardization the main issue. There is great scope for research within CSI with the continuing technological advances. This chapter ends with the topic of forensic nursing, which combines the knowledge and skill of nursing with forensic science. The main focus tends to be on traumatic injuries and the recovery of evidence on both the living and the deceased. The majority of cases include sexual assault, child abuse, elder abuse and domestic violence. The discipline has advanced since its beginning in the late 80s and 1990s. With its own peer-review journal established in 2005. The key concerns are operating in an unbiased framework – seeking the truth based on evidence. This area has been slow to develop outside the USA. Criminalistics follows in Chapter 3 and opens with the statement 'physical evidence cannot be wrong; it cannot perjure itself; it cannot be wholly absent. Only in its interpretation can there be error' (Kirk 1953). This is certainly true today. But since Dr Kirk wrote those words there has been considerable advancement in science and technology with which the forensic scientist must keep open-minded. This chapter covers management, illicit drugs, DNA, fire debris and trace evidence.

Chapter 4 focuses on the advancement of forensic pathology techniques, especially with regard to the imaging as a result of the increase in mass disasters where there is a need for rapid identification of the dead. Following on in chapter 5 is forensic anthropology. Forensic anthropology is one component of biological anthropology, in that it applies our understanding of modern human biological variation to address questions of medicolegal significant, i.e personal identification. It is a discipline with a short history but has made a strong impact with the forensic sciences. The author describes the methods used to attain a biological profile age, sex, ancestry and stature. The role of the anthropologist and benefits at the crime scene. Trauma analysis and taphonomy and post-mortem interval (PMI) are also

outlined both topics have generated a large volume of research over the years. There are numerous challenges including validation of research, certainly of 'positive' identification. And the subject of ancestry remains controversial. Future goals – international engagement of forensic anthropologists from around the world, key issue for research involves exploring the extent and nature of local and global modern human variation. Adult ageing techniques – older individuals, greater attention given to soft tissue anatomy and the importance of working alongside pathologists. In Chapter 6 forensic toxicology is discussed. Toxicology is the study of adverse effects of drugs and chemicals on biological systems. It has being used in criminal investigations, sport, licensing, human performance, doping control and forensic workplace drug testing. Following on in Chapter 7 forensic odontology which can be defined as the collection, assessment and analysis of individualizing dental features. The two main tasks given to forensic dentists are the identification of human remains and assessment of bitemark injuries. The areas of focus here include bitemarks, disaster victim identification (DVI) or multiple fatality incident (MFS) and ageing. The chapter also looks at global identification issues.

Forensic psychiatry and psychology are the subject of Chapter 8 and can be defined as the explication of psychiatric issues in the legal arena. This specialism has a long history in the United States. Psychiatrists are routinely asked to document mental health assessments in criminal proceedings to help courts establish criminal responsibility but also in civil suits, for example in cases of injury or negligence. Forensic document examination (Chapter 9) involves the examination of documentary evidence in order to determine authenticity of authorship. It is a field of study which has a long history, having been established over 100 years ago. The main principles of identification include: handwriting identification theory, development of handwriting in an individual, sources of uniqueness and device identification. The following examinations can be carried out on documents – handwriting comparison, typewriting comparison, computer-generated documents, examination of alterations, ink analysis, indentation examination, comparison of copies, charred and torn documents. Following on in chapter 10 is digital and multimedia science. In an ever changing digital age and where most individual nowadays have an 'electronic footprint', this is an ever important area of investigation. There are many areas where digital evidence can be retrieved, including homicide, robbery, burglary, larceny, illicit drug trafficking, ID theft, fraud, child pornography. It is a complex and complicated area of study. Chapter 11 looks at forensic engineering, another subject which has developed considerable over the 70 years or so. This chapter focuses on the situation in the United Kingdom, Philippines and Bangladesh. Chapter 12 focus is on Jurisprudence.

Chapter 13 outlines the purpose, framework and recommendations for carrying out forensic investigations into the dead and missing from armed conflicts. Chapter 14 focus is on research within forensic science. Great variation in what is 'forensic science' from country to country, but also application of forensic science depends on a particular country's economic and socio-cultural development. Many problems can be encountered, such as; differences in procedures and practices, training, and obviously many factors contribute to lack of research within forensic science. Some of these factors include: staff shortage and excess workload, lack of professional and economic

incentives, isolation from academic communities, and lack of training in scientific research, scientific research is not an institutional priority, shortage of funds, languages problems, and legal restrictions upon the development of scientific research based on forensic investigations. The concluding chapter presents an overall summary and conclusions.

Overall, this book provides interesting and detailed discussions of the numerous specialisms which can aid in criminal investigations. Although the main focus is on the American system, it will no doubt have benefits to those working within the British criminal justice system and to those studying and working within the forensic sciences.

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