Forensic Science Identification Evidence: Tensions Between Law and Science

Sarah Lucy Cooper*

* Senior Lecturer in Law, Birmingham City University's School of Law, sarah.cooper@bcu.ac.uk

Abstract

For decades, courtrooms around the world have admitted evidence from forensic science analysts, such as fingerprint, tool-mark and bite-mark examiners, in order to solve crimes. Scientific progress, however, has led to significant criticism of the ability of such disciplines to engage in individualization i.e., "match" suspects exclusively to evidence. Despite this, American courts largely reject legal challenges based on arguments that identification evidence provided by these forensic science disciplines is unreliable. In so holding, these courts affirm precedent that it is the adversarial system's function to weed out frailties in forensic evidence, and find that criticism of the forensic sciences lacks sui generis qualities. This article provides an independent critique of relevant American case law, from which three themes emerge. These themes are (1) the law's misuse of science; (2) law's scepticism towards change; and (3) law's narrow construction of rationality, which generates reductionist concepts, and divorces science from its social context. As such, this article shows how the American judiciary's approach to this global issue provides a contemporary illustration of key institutional tensions between science and law, and offers some recommendations for reforms that aim to facilitate the legal process to utilize the most reliable forensic science evidence possible.

Introduction

Science and law are powerful social institutions that enjoy "great epistemic legitimacy and authority."[1] One area of society in which these two institutions intersect, and, indeed, compete for epistemic legitimacy, is the criminal justice process. This is particularly the case when the criminal justice process 'uses' science to answer forensic questions and help solve crime.

Crime-solving can involve the application of both 'hard' and 'soft' science. Hard science refers to natural or physical sciences, such as chemistry, biology, mathematics, and physics. These sciences investigate the universe by means of hypotheses and experiments where precise measurement, calculation and prediction can generally occur.[2] In a crime-solving sense, hard science can tell us, for example, whether a driver has alcohol in his blood through toxicology testing, and, through the application of DNA technology, whether a suspect is the donor of a DNA profile found on an assault victim. By contrast, the soft sciences comprise disciplines that interpret human behaviour, institutions and society on the basis of investigations for which it can be difficult to establish such levels of precision.[3] Soft sciences (also known as social sciences) include psychology, sociology and