

HIST480

Sir Sydney Smith's contribution to the change of the medical detective's working style from the 'lone expert' to 'a team of scientists' in early twentieth century England and Scotland

By Mei-Chien Huang

Supervisors: Heather Wolffram and David Monger

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Abstract

Sir Sydney Smith was a well-respected forensic pathologist in Britain during the twentieth century. While there is some secondary literature on Smith, it does not examine him and his various interesting cases in detail. Furthermore, few historians attempted to compare the English and the Scottish traditions of forensic medicine, or medical jurisprudence. Consequently, the effects of these different traditions on the medical experts who assisted in crime investigations have not been fully appreciated.

This dissertation adds to the existing literature on the history of forensic medicine and forensic science by comparing the English and the Scottish traditions of medical jurisprudence and tracing their influences on British experts of the early twentieth century. The contention that English medical experts tended to be self-reliant, while their Scottish equivalents were more willing to collaborate with each other as a result of their different environment, is made in this dissertation. This illustrates the background to Smith's career as a medical detective. A further argument in this dissertation is that Smith was a transitional figure who encouraged his fellow medical detectives to break away from being completely self-reliant to undertake collaborative work with other scientific experts. He did this through the way he participated in his major cases and the way he taught future generations of medical experts. Various sources such as Smith's textbooks and journal articles were used to contextualise his autobiography and demonstrate his contribution to the gradual adoption of a team approach by British scientists in an objective way.

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List of Abbreviations

3rd Ser. – Third Series

Doug. K. B. – Douglas' King's Bench Reports

Parl. Deb. – Parliamentary Debates

Will. 4. – William IV of the United Kingdom (reigning from 1830 to 1837)

Introduction

After the publication of *A Study in Scarlet* in 1887, Sherlock Holmes captured the public's imagination.¹ Significantly, Holmes, a scientist, prides himself on being a 'consulting detective', saying 'I am the only one in the world.'² In this dissertation, the 'lone expert' encapsulated by Holmes is a type of scientific hero who solves crimes. Typical characteristics include the tendency to work alone, and an inclination to present himself as the authority on subjects which are beyond his specialty. This is consistent with the practising English forensic experts of the early twentieth century, but not with their Scottish equivalents.³ However, during the twentieth century, forensic scientists gradually began to work together to solve crimes.⁴ The main contention of this dissertation is that Sir Sydney Smith, a prominent Scottish pathologist, encouraged some of the changes which took place during the twentieth century that led scientists to participate in crime investigations in teams.

Medical men gained the important role of giving expert opinion in murder trials because the insanity defence and poisoning crimes became commonplace in the eighteenth and nineteenth centuries.⁵ At times, scientific testimonies established the defendants' guilt. These experts' focus on the purely scientific aspects of the crime distinguished them from police detectives. Both Robin Odell and Katherine Watson refer to pathologists who used their knowledge of forensic medicine and science to solve crimes as 'medical detectives.'⁶ However, the term has a longer

¹ Anne Perry, introduction to *A Study in Scarlet*, by Arthur Conan Doyle (New York: Modern Library, 2003), p. xi.

² Arthur Conan Doyle, *A Study in Scarlet* (London, 1887), reprinted with introduction by Anne Perry (New York: Modern Library, 2003), p. 17.

³ Jennifer Ward, 'Origins and Development of Forensic Medicine and Forensic Science in England, 1823-1946' (PhD diss., Open University, 1993), 71-74; Nicholas Edward Duvall, 'Forensic Medicine in Scotland, 1914-39' (PhD diss., University of Manchester, 2013), 10-11.

⁴ Robin Odell, *Medical Detectives: The Lives and Cases of Britain's Forensic Five* (Stroud: The History Press, 2013), p. 11.

⁵ Katherine Watson, *Poisoned Lives: English Poisoners and Their Victims* (London: Hambledon and London, 2004), pp. xii, 166-170; Katherine Watson, *Forensic Medicine in Western Society: A History* (London: Routledge, 2011), p. 63.

⁶ Odell, *Medical Detectives*; Watson, *Forensic Medicine*, p. 58.

history as Francis Camps, an English pathologist, used it to describe medical-legists in Smith's autobiography in 1960.⁷ 'Medical detective' thus covers a scientist who uses medical science, rigorous logic and keen observational skills to solve crimes. While pathologists were mainly interested in the human body, this term is appropriate because many prominent early-twentieth-century pathologists were also experts in other areas of forensic science.⁸

Methodology

Primary sources such as autobiographies, textbooks, journal and newspaper articles, and trial transcripts provide evidence to support this dissertation. The autobiographies include *Mostly Murder*, *Forty Years of Murder* and *Final Diagnosis*, written by Smith, Keith Simpson and John Glaister Jr. respectively.⁹ Autobiographies have several limitations. They are usually written a long time after the events took place, so the authors might have recalled details inaccurately. Ghost writers assisted Smith in writing *Mostly Murder*. Smith produced an initial draft, but its style was considered to be too academic.¹⁰ Since the autobiography was intended for public consumption, the publishers wanted the writing to be embellished and edited. Therefore, certain scientific information in Smith's first draft was cut. Patrick Pringle, Smith's editor, implied this when he wrote in a letter to Smith that he had 'tried... to respect [Smith's] wishes and [was] not... drastic enough in cutting... what [Smith] had written'.¹¹ Furthermore, as Nicholas Duvall points out, one of the purposes of scientists' autobiographies is to shape their writers' legacies in forensic science. This is true even for *Mostly Murder*, as Smith ultimately controlled how the book portrayed himself and his work. Therefore, autobiographies contain biases which could distort the way events are discussed in the book. Smith, Simpson and Glaister might have attempted to justify

⁷ Francis E. Camps, 'An Expert In Murder', review of *Mostly Murder*, by Sydney Smith, *British Medical Journal* 2, no. 5196 (August 1960), 440.

⁸ M. Anne Crowther and Brenda White, *On Soul and Conscience: The Medical Expert and Crime: 150 Years of Forensic Medicine in Glasgow* (Aberdeen: Aberdeen University Press, 1988), p. 26.

⁹ Sydney Smith, *Mostly Murder* (London: G. Harrap, 1961); Keith Simpson, *Forty Years of Murder* (London: HarperCollins, 1978); John Glaister Jr., *Final Diagnosis* (London: Hutchinson & Co, 1964).

¹⁰ Duvall, 'Forensic Medicine in Scotland', 218-219.

¹¹ Patrick Pringle to Sydney Smith, December 3, 1958, Sydney Smith Papers, SMS/7/63, Royal College of Physicians of Edinburgh, Edinburgh, quoted in Duvall, 'Forensic Medicine in Scotland', 219.

their actions and present themselves positively.¹² For instance, Smith criticised Sir Bernard Spilsbury's stubbornness in *Mostly Murder*, and contrasted his own actions favourably against Spilsbury's approach in Dr. Avarne's case, as discussed in Chapter Two.¹³ These pathologists also tended to downplay other pathologists' presence in their autobiographies. For instance, Glaister only mentioned Smith twice in his autobiography even though they collaborated in cases and wrote textbooks together.¹⁴

Smith's textbooks *Forensic Medicine* and *Recent Advances in Forensic Medicine*, as well as articles from journals such as the *Police Journal* are investigated. These texts were for professional or academic readers, so they excluded information irrelevant to the technical explanations. Jargon also made the texts inaccessible to most readers. The *Times* and *Daily Mail* newspaper articles had the opposite problem. Because newspapers were for the general public, certain facts were cut to suit the public's interest. In those articles, the sensational facts generally took precedence over medical or legal arguments used in the trial. For example, in the Aberdeen child murder of 1934 (discussed in Chapter Two), Smith's work in proving Jeannie Donald's guilt was not mentioned in the *Times*, which only described the discovery of the body, Jeannie Donald's arrest and her committal for trial.¹⁵ The *Notable British Trials* series includes trial transcripts.¹⁶ That modern historians regard these transcripts' introductions as unreliable, however, is evident in recent reviews of the prosecution case in the Sidney Fox trial.¹⁷ Additionally, the editors excluded material not judged to be pertinent from trial transcripts. Although each primary source has its limitations, however, they can be addressed by using a range of both primary and secondary sources to gain a complete picture. When the sources are compared critically, some materials can

¹² Duvall, 'Forensic Medicine in Scotland', 214.

¹³ Smith, *Mostly Murder*, pp. 196-204.

¹⁴ Glaister, *Final Diagnosis*, pp. 62, 102.

¹⁵ 'Missing Girl's Body Found', *Times*, April 23, 1934, 16; 'Five Solicitors Struck off the Roll', *Times*, July 7, 1934, 4.

¹⁶ William Roughead, ed., *Trial of John Donald Merrett* (Sydney: Butterworth, 1929); F. Tennyson Jesse, ed., *Trial of Sidney Harry Fox* (Sydney: Butterworth, 1934); R. H. Blundell and G. Haswell Wilson, eds., *Trial of Buck Ruxton* (Sydney: Butterworth, 1937).

¹⁷ Andrew Rose, *Lethal Witness: Sir Bernard Spilsbury, Honorary Pathologist* (Kent, OH: The Kent State University Press, 2007), pp. 179-180.

compensate for the weaknesses in other sources. This also leads to a greater appreciation of the primary sources' meaning and their potential biases.

Historians have studied the development of forensic medicine and science in England and Scotland; however, few had investigated this subject in the English context before Jennifer Ward's 1993 thesis.¹⁸ More texts which trace the history of the English crime investigation system emerged in the 2000s. Ian Burney investigates the changes in English inquests and post-mortems during the nineteenth century.¹⁹ Watson focuses on poisoning crimes and the rise of the importance of expert witnesses at poisoning trials.²⁰ Conversely, M. Anne Crowther and Brenda White trace medical jurisprudence's development in Scotland. They examine prominent experts in Glasgow from the nineteenth century.²¹ Duvall's 2013 thesis offers a more balanced view of forensic medicine in Scotland by examining both Edinburgh and Glasgow experts.²² More generally, Tal Golan studies the development of scientific experts within Anglo-American legal systems.²³ In another work, Watson also canvasses the advances in medical jurisprudence across Europe, including England and Scotland,²⁴ but she does not examine the differences between the different British traditions and their consequences closely. Consequently, this dissertation fills a gap in the existing literature by studying both English and Scottish traditions in detail and analysing the effects they had on medical detectives.

There is no substantial historical scholarship on forensic pathologists, and existing historiography tends to focus on significant individuals. Most of the literature on this topic is biographical. The historiography on Spilsbury is significant because he was a celebrity pathologist who exemplified the typical English lone expert in the early twentieth century. While earlier work by Douglas

¹⁸ Ward, 'Origins and Development of Forensic Medicine'.

¹⁹ Ian Burney, *Bodies of Evidence: Medicine and the Politics of the English Inquest, 1830-1926* (Baltimore: John Hopkins University Press, 2000).

²⁰ Watson, *Poisoned Lives*.

²¹ Crowther and White, *On Soul and Conscience*.

²² Duvall, 'Forensic Medicine in Scotland'.

²³ Tal Golan, *Laws of Men and Laws of Nature: The History of Scientific Expert Testimony in England and America* (Cambridge: Harvard University Press, 2004).

²⁴ Watson, *Forensic Medicine*.

Browne and E. V. Tullett tends to be more positive,²⁵ recent literature has been critical. Andrew Rose, Burney and Neil Pemberton all agree that, although Spilsbury worked with others, he preferred to work alone.²⁶ In contrast, Smith's autobiography has not been seriously challenged in existing literature. Except for Duvall's thesis, as mentioned above, most secondary sources seem to accept Smith's autobiography as authoritative.²⁷ Odell and Katherine Ramsland study significant forensic experts' lives, but these are general overviews.²⁸ They do not analyse Smith's professional writings closely, or explore how individual experts' actions encouraged scientists to solve crimes by working in teams.

Much of the existing literature on the history of forensic medicine, therefore, either focuses exclusively on one tradition, or covers several countries at once but not in any great detail. In contrast, this paper compares and contrasts medical detectives in the English and Scottish traditions. It also examines the factors which shaped the type of expert which developed in each place. Additionally, historians have not explored Smith in any depth, although he is a recognised authority in medical jurisprudence. Smith's expert testimony clashed repeatedly with that of Spilsbury, so this presents greater opportunities for comparison between different types of medical detective. Although Odell argues that Smith encouraged medical experts to cooperate with others, he does not explore this claim in depth.²⁹ By focusing on Smith, this study sheds some light on a well-respected man who seemed to recede into the background after his death. In this dissertation, the different types of medical detectives' development show why modern scientists collaborate with each other to solve crimes. Detailed examination of developments of

²⁵ Douglas G. Browne and E. V. Tullett, *Bernard Spilsbury: His Life and Cases* (London: Harrap, 1951).

²⁶ Rose, *Lethal Witness*, p. xix; Ian Burney and Neil Pemberton, 'The Rise and Fall of Celebrity Pathology', *British Medical Journal* 341, no. 7786 (December 2010), 1320.

²⁷ See, e.g., Brian Sweeney and Ingrid Horrocks, 'Sydney Smith: The Scientific Detective', <http://www.nzedge.com/sydney-smith/>. [Last accessed March 8, 2014].

²⁸ Odell, *Medical Detectives*; Katherine Ramsland, 'A Sharp Eye in the Autopsy: Profile of Keith Simpson', *Forensic Examiner* 16 (Spring 2007), 69-71; Katherine Ramsland, 'Beyond the Obvious: The Cases of Sir Sydney Smith', *Forensic Examiner* 16 (Summer 2007), 58-60; Katherine Ramsland, 'The Incomparable Witness: Sir Bernard Spilsbury', *Forensic Examiner* 17 (Spring 2008), 70-72; Katherine Ramsland, 'Francis Camps: Inside the Palace of Truth', *Forensic Examiner* 18 (Summer 2009), 80-82.

²⁹ *Ibid.*, p. 109.

the team approach among forensic scientists is a means of exploring Odell's claim in greater depth.

The extent to which English and Scottish medical detectives of the early twentieth century fit into the lone expert model is considered in Chapter One. Because of different factors in their respective environments, English medical detectives tended to fit into the lone expert model more than their Scottish equivalents. While Smith showed traits of the lone expert at times, it is made clear in Chapter Two that he was a transitional medical detective. He encouraged a team approach among scientists in crime investigations through his actions and writings, and this affected younger English medical detectives as well as English organisations related to forensic medicine. This dissertation thus offers insights into developments in forensic medicine and science by tracing the evolution of two kinds of medical detectives in England and Scotland, and demonstrating how one scientist encouraged British forensic scientists to adopt the team approach.

Chapter One

The extent to which British medical detectives were lone experts in the early twentieth century is explored in this chapter through tracing the development of forensic medicine and science in England and Scotland. The introduction has explored the lone expert model briefly. The lack of governmental support, the nature of the English legal system, and the absence of a formal university discipline were major factors which shaped English medical detectives into lone experts. While there were variations between scientists, Spilsbury, one of the most notable instances of the lone expert, was a product of this tradition. In contrast, the establishment of the discipline of medical jurisprudence and official support in Scotland created an environment which was conducive to a team approach. Although Scottish lone experts existed, Scottish medical detectives generally did not fit into the lone expert model as well as their English counterparts throughout the nineteenth and twentieth centuries. They were better placed than English experts in promoting a team approach. Since few secondary sources compare the English and Scottish traditions in detail, this chapter focuses specifically on these British traditions, the differences between them, and their effects. In doing so, this chapter sets out the environment in which Smith and other British medical detectives before him operated, thus placing Chapter Two's discussions in context.

The English Tradition

Several factors, such as limited governmental support, influenced English medical detectives. Traditionally, the English government did not prioritise reforms for its criminal investigation systems. The coroner was the first office which was established to investigate suspicious deaths by holding inquests.¹ While they became elected local government officials from 1194, no

¹ Watson, *Poisoned Lives*, p. 154.

particular academic qualification was required to become a coroner since its inception.² Coroners' competency thus varied from place to place for centuries. In 1830, a survey in the *Lancet* revealed that no English coroner was medically qualified. Although around fifteen percent of 330 coroners had medical training by the late nineteenth century, consistency in the coroners' quality was only achieved after the Coroner's Amendment Act 1926 required coroners to hold a legal or medical qualification. The English government showed the same lack of interest in funding investigations into suspicious deaths. Coroners were originally unpaid, and many had to be bribed to hold inquests.³ Despite a reform by Henry VII to pay coroners for homicide inquests in 1487, corruption remained widespread.⁴ There was no monetary incentive for coroners to scrutinise seemingly accidental deaths, so these cases tended to be overlooked. This situation was not alleviated by coroners' financial dependence on Justices of the Peace since the sixteenth century, as Justices of the Peace controlled fee payments to coroners.⁵

English courts could call independent experts to sit on special juries or assist in certain cases from 1299, and, from the reign of Elizabeth I, it became common practice for parties in dispute to call experts as their witnesses. Unfortunately, evidential rules disallowed scientific observations and conclusions unless they were derived from direct experience in the case itself.⁶ The modern understanding of expert witnesses only appeared after the 1782 case of *Folkes v Chadd*, where Lord Mansfield considered expert opinion. He concluded that 'in matters of science, the reasonings of men of science can only be answered by men of science.'⁷ As the Court realised they needed special assistance with the rise of the insanity defence and poisoning crimes, medical experts gained prominence over other experts.⁸

² Watson, *Poisoned Lives*, p. 154; Duvall, 'Forensic Medicine in Scotland', 12.

³ Watson, *Poisoned Lives*, pp. 155-156.

⁴ Thomas Rogers Forbes, 'Crown's Quest', *Transactions of the American Philosophical Society* 68, no. 1 (1978), 5; Watson, *Poisoned Lives*, p. 155.

⁵ Watson, *Poisoned Lives*, pp. 155-157.

⁶ Golan, *Laws of Men*, pp. 20-22.

⁷ *Folkes v. Chadd*, (1783) 3 Doug. K.B. 157, 159.

⁸ Watson, *Forensic Medicine*, p. 63.

However, the lack of financial incentives in the English coronial system and limited government funding since 1194 discouraged medical practitioners from specialising in forensic medicine.⁹ Coroners' limited financial autonomy meant medical witnesses had little opportunity to participate in inquests.¹⁰ It was not until the Medical Witnesses Act 1836 was passed that the law for remunerating medical witnesses at inquests was first set out.¹¹ The Act stated that 'every legally qualified Medical Practitioner for attending to give Evidence under the Provision of this Act at any Coroner's Inquest whereat no post-mortem Examination has been made by such Practitioner, the Fee or Remuneration shall be One Guinea.'¹² A career in forensic medicine was also unattractive for other reasons. The coroners usually obtained a medical opinion by summoning the doctor who attended the deceased prior to death or the parish surgeon if nobody treated the deceased before death.¹³ The relevant doctor could be subpoenaed if he refused to attend.¹⁴ The same practices continued after 1836 because the only qualification to choosing the doctor to consult with in any inquest was proximity to the case in question.¹⁵ Thus, the doctor had no control over his practice even if he was content with the low remuneration for his work.¹⁶ Those who specialised in forensic medicine sought additional work to supplement their income. Nineteenth-century experts such as Henry Letheby combined work in forensic medicine with his role as a public analyst, where he ensured the standard of food and medicine was satisfactory.¹⁷ Experts in forensic medicine were expected to be familiar with all areas of medical jurisprudence in England. In March 1882, Sir John St. Aubyn asked in the House of Commons '[whether], in cases of suspected poisoning, when an analysis is directed to be made, [the Home Secretary Sir William Harcourt] would consider whether it would not be more satisfactory that the suspected persons

⁹ Ward, 'Origins and Development of Forensic Medicine', 11.

¹⁰ Watson, *Poisoned Lives*, p. 157.

¹¹ Burney, *Bodies of Evidence*, p. 108.

¹² Act to provide for the Attendance and Remuneration of Medical Witnesses at Coroners Inquests, 1836, 6 & 7 Will. 4, c. 89.

¹³ Burney, *Bodies of Evidence*, p. 109; Watson, *Poisoned Lives*, p. 165.

¹⁴ Watson, *Poisoned Lives*, p. 165.

¹⁵ Burney, *Bodies of Evidence*, p. 109.

¹⁶ Ward, 'Origins and Development of Forensic Medicine', 70.

¹⁷ Ward, 'Origins and Development of Forensic Medicine', 63; Watson *Poisoned Lives*, p. 171.

should have an opportunity of being represented professionally at such analysis?’ Harcourt responded that ‘it never would do to allow a delicate process of this kind to be conducted by a combination of persons, who might be acting in adverse interests, and thus defeat the object of the experiments’.¹⁸ Instead, Harcourt appointed two ‘independent, experienced men of science’ as Home Office Analysts in 1882. Home Office Analysts were formalised appointments of medical experts such as Thomas Stevenson who regularly appeared in trials since 1870. Home Office Analysts were to perform chemical analysis originally, but there was a growing expectation that they would conduct all necessary scientific examinations to solve crimes after the role of public prosecutor became established for major criminal cases after 1884. For example, after a fire in a shop in 1909, William Willcox, a Home Office Analyst, was expected to examine and report on broken pieces of glass from a window in order to advise if a shopkeeper could be charged with arson.¹⁹

The English universities and legal system did not accommodate the development of a fully-fledged university discipline for medical jurisprudence in English universities. In Germany, the *Constitutio Criminalis Carolina* of 1532 stated that ‘[when] the authorities ex officio bring criminal complaint or proceedings against a criminal, the judges (where they find themselves in doubt) are obliged to seek advice from the nearest universities’.²⁰ Therefore, German courts referred cases to universities for expert scientific advice, and those who regularly dealt with those queries produced relevant literature gradually. Subsequently, most German universities in the eighteenth century had the formal discipline of forensic medicine combined with public health, which was concerned with matters such as sanitation.²¹ Because there was no comparable English system and English law imposed restrictions on expert opinion evidence until 1782, the same discipline

¹⁸ 268 Parl. Deb. (3rd Ser.) (1882) 4-5.

¹⁹ Ward, ‘Origins and Development of Forensic Medicine’, 77-82.

²⁰ Article 219, *Constitutio Criminalis Carolina* 1532, in John H. Langbein, *Prosecuting Crime in the Renaissance: England, Germany, France* (Cambridge: Harvard University Press, 1974), p. 307.

²¹ Brenda White, ‘Training Medical Policemen: Forensic Medicine and Public Health in Nineteenth-Century Scotland’ in *Legal Medicine in History*, ed. by Michael Clark and Catherine Crawford (Cambridge: Cambridge University Press, 1994), p. 153; Watson, *Forensic Medicine*, p. 39.

did not develop in England. Instead, forensic medicine alone was first taught in London in 1823 by John Gordon Smith after he wrote the book *The Principles of Forensic Medicine*. After the Society of Apothecaries in London made the subject compulsory in 1831, major universities such as the University of London and hospitals like Guy's taught forensic medicine, but there was no university department devoted to the subject. As forensic medicine was merely a compulsory undergraduate course, the training was theoretical and no in-depth study was usually offered.²² The medical profession and the general public also regarded forensic medicine with distaste. After several scandalous trials during the nineteenth century, pathology came to be known as the 'Beastly Science'.²³ When the British Medical Association developed a qualification for public health practice during the 1860s, forensic medicine was not integrated with public health to become a discipline because of adverse professional opinions from both the Continent and the prominent English medical expert Alfred Swaine Taylor.²⁴ Dr. Varrentrapp of Germany believed that '[forensic medicine and public health] will be done in a subordinate manner if trusted to the same man', which was supported by Taylor's opinion that 'it would be impossible to... find a class of men who... would be competent to practise in such a variety of subjects'.²⁵ Consequently, the standard of teaching in forensic medicine remained low in England since no further study was offered.

As a result, English medical detectives at the turn of the twentieth century did not establish or identify with any common, permanent and formal institution which specialised in their subject.²⁶ By focusing on forensic science, Taylor, a famous English toxicologist and professor in forensic medicine between 1831 and 1877, became a lone figure in an environment where other medical

²² Ward, 'Origins and Development of Forensic Medicine', 24, 40-41.

²³ Rose, *Lethal Witness*, p. 2.

²⁴ Ward, 'Origins and Development of Forensic Medicine', 57, 60.

²⁵ General Medical Council, *State Medicine: Resolutions of the General Medical Council, Adopted July 9 and July 12, 1869; Together with the Second Report and Appendix of the Committee on State Medicine, Appointed June 27 1868, July 13 1869* (London: General Medical Council, 1869), pp. 14, 54, quoted in Ward, 'Origins and Development of Forensic Medicine', 59-60.

²⁶ Crowther and White, *On Soul and Conscience*, p. 2.

practitioners often dabbled in multiple areas of science and were appointed to governmental roles.²⁷ Select individuals gained expertise in forensic medicine through apprenticeship systems. For instance, Taylor taught Stevenson, who in turn trained Willcox. The Home Office Analysts' expertise was thus kept to the select few who regularly served as expert witnesses.²⁸ Similarly, Spilsbury gained the patronage of prominent pathologist Dr. Augustus Pepper when the former became Pepper's surgical dresser at St. Mary's Hospital.²⁹ Because of this apprenticeship system, the only people in England who had enough expertise in pathology in the early twentieth century were pathologists in charge of larger provincial hospitals, as well as Spilsbury and John Taylor.³⁰

Limited governmental support in England also produced an environment adverse to the formation of a group identity by medical detectives in the nineteenth century. Since most doctors were not interested in medical jurisprudence and the few individuals specialising in forensic science belonged to different institutions, there was little incentive among medico-legal experts to band together into a group. The few individuals who practised forensic medicine did not need to be coordinated. Additionally, as medical experts were partially derived from the appointed experts who assisted English courts, they were treated as people with unique expertise who required no assistance from the outset. Unlike other medical sciences, no regular forum for debate on medico-legal issues existed in the late nineteenth century. No specific journal was devoted to forensic science; the major texts were Alfred Swaine Taylor's *Manual of Medical Jurisprudence* and *Principles and Practice of Medical Jurisprudence*, first published in 1844 and 1865 respectively, which did not offer opportunities for debate by their nature. Furthermore, given the low remuneration for the work done, there were rivalries between English medical detectives. For instance, since Taylor depended on forensic medicine for his livelihood, he might

²⁷ Ward, 'Origins and Development of Forensic Medicine', 71-74.

²⁸ Ibid., 11, 85-86.

²⁹ Rose, *Lethal Witness*, p. 11.

³⁰ Simpson, *Forty Years*, p. 29.

have felt Letheby threatened his reputation as a toxicologist.³¹ The two clashed over the controversial William Palmer case in 1856, where Taylor was the principal medical expert for the prosecution case that the victim died of strychnine poisoning, while Letheby appeared for the defence which put forward multiple alternative causes of death.³² It was not until 1901 that the first society devoted to forensic medicine, the Medico-Legal Society, was formed.³³

While English medical detectives worked with other scientific experts sometimes, the English environment was unsuited for the team approach. The lack of governmental financial help, the nature of the legal system, the limited support from people with the same specialisation, and competition between experts meant medical detectives must be self-reliant to succeed. These were the conditions under which Spilsbury began his career. Although Spilsbury assisted his mentor with pathological exercises early in his career, he did not consistently collaborate with the same pathologists or doctors in his later cases. As a fully-fledged pathologist, the only person Spilsbury regarded as invaluable when he conducted his investigations appeared to be his medically-untrained secretary Hilda Bainbridge, who worked with him for only five out of his career of nearly forty years.³⁴ By contrast, the Scottish medical detective John Glaister Sr. had worked with his son and other scientists regularly in post-mortems by the early 1920s for reasons to be discussed below and in Chapter Two.³⁵

While Spilsbury's working style was arguably partially attributable to his aloof personality, the way forensic medicine had evolved in England influenced him to be a self-reliant scientist. His confidence in his own abilities led him to give opinions which were beyond his professional expertise. Spilsbury's attitude affected his ability to work with others as he dominated experiments he was not well-qualified to design. In the 1927 case of John Donald Merrett, the

³¹ Ward, 'Origins and Development of Forensic Medicine', 67-68, 73-74.

³² 'William Palmer, Killing- murder, 14th May 1856', *Old Bailey Proceedings Online*, <http://www.oldbaileyonline.org/browse.jsp?id=t18560514-490-offence-1&div=t18560514-490>. [Last accessed on September 8, 2014].

³³ Ward, 'Origins and Development of Forensic Medicine', 67.

³⁴ Rose, *Lethal Witness*, pp. 13, 142.

³⁵ Crowther and White, *On Soul and Conscience*, p. 54.

prosecution claimed that Merrett murdered his mother, Bertha.³⁶ Spilsbury cooperated with the gunsmith Robert Churchill in building the defence case that Mrs. Merrett attempted to commit suicide by shooting herself in the head.³⁷ Although Churchill was the gunsmith, with 'lifelong experience of firearms of all kinds',³⁸ Spilsbury designed the experiments with the guns.³⁹ The Merretts' pistol and the same brand of ammunition were not used in these experiments. While the Spilsbury-Churchill collaboration continued over the years, the two came into conflict when Churchill disagreed with Spilsbury about the experiments' usefulness.⁴⁰ The fact that Spilsbury ignored Churchill's opinions reflected the prominence of medical witnesses over other types of experts in court, as he seemed to believe that others must accommodate his wishes. Furthermore, the fact that Spilsbury was a professional man whose abilities were well-respected by the court and the public might have forced Churchill to defer to him. Showing discord or challenging the principal medical expert could undermine Spilsbury's authority and damage the case.

As English medical detectives found themselves to be the only experts in an obscure professional area, they had to appear competent to inspire the jury's or the judge's confidence in them. Therefore, they asserted their opinions forcefully and ignored challenges to their views, which thwarted the course of justice at times. Spilsbury's attitude in the 1930 Sidney Fox case demonstrated this. After Fox's mother, Rosaline, died in a fire under suspicious circumstances, Fox was accused of murdering her to benefit from the subsequent insurance payout.⁴¹ Since Spilsbury found a bruise on Mrs. Fox's throat during the autopsy, the prosecution argued that Fox strangled his mother. Sydney Smith, who appeared for the defence, argued that Mrs. Fox died of heart failure upon finding smoke in her room. When Smith and other doctors examined Spilsbury's samples, they did not find the bruise. Although it is impossible for bruises to disappear

³⁶ 'Edinburgh Murder Trial: Son Charged with Shooting Mother', *Times*, February 2, 1927, 9.

³⁷ 'Edinburgh Murder Trial: Case for the Defence', *Times*, February 8, 1927, 11.

³⁸ Roughead, *Trial of John Donald Merrett*, p. 220.

³⁹ Rose, *Lethal Witness*, p. 42.

⁴⁰ Macdonald Hastings, *The Other Mr Churchill: A Lifetime of Shooting and Murder* (London: G. G. Harrap, 1963), pp. 117-8.

⁴¹ 'Margate Murder Charge: Fox on Trial', *Times*, March 13, 1930, 11.

after death, Spilsbury insisted that he saw the bruise and persisted with his theory during the trial.⁴² While Mr. Justice Rowlatt noted in his summing-up that Spilsbury might have been mistaken, the jury found Fox guilty of murder despite the conflicting evidence.⁴³ Smith's view was probably more accurate in modern scientific opinion. Rose's view is that mother and son knew of the mother's heart condition, so they took out the insurance in anticipation of the payout upon her death, which he would make appear accidental to claim the money.⁴⁴ However, if that was the case, it is unclear why Fox did not use this story as his defence. It is equally plausible that Fox single-handedly planned the whole scheme, and would have eventually killed Mrs. Fox had she not died naturally first. Regardless of Fox's intentions, he did not strangle his mother. Spilsbury's intolerance of other reasonable opinions was a hallmark of the lone expert. Experts had changed their initial conclusions in the past. Scottish experts like Sir Harvey Littlejohn deviated from his initial findings after considering Smith's opinions in the Merrett case.⁴⁵ Spilsbury's stubborn attitude partially led to the injustice in this case, which demonstrated a pitfall of the lone expert model.

The Scottish Tradition

The Scottish administration was more receptive to scientific advances. This created an environment which was more conducive to the team approach at the time forensic science was introduced into Scotland. Following the Union of the Crowns in 1603 and the Union of the Parliaments in 1707, Edinburgh was a capital without a royal court.⁴⁶ Nicholas Phillipson asserts that the traditional governing class started to take an interest in initiating social and economic development after they lost parliamentary power.⁴⁷ By the late eighteenth century, the

⁴² Smith, *Mostly Murder*, pp. 158-159.

⁴³ Jesse, *Trial of Sidney Harry Fox*, p. 226; 'Fox Found "Guilty": Close of Margate Murder Case', *Times*, March 22, 1930, 4.

⁴⁴ Rose, *Lethal Witness*, pp. 171-179.

⁴⁵ Odell, *Medical Detectives*, p. 77.

⁴⁶ White, 'Training Medical Policemen', p. 147.

⁴⁷ Nicholas Phillipson, 'Towards a Definition of the Scottish Enlightenment', in *City and Society in the Eighteenth Century*, ed. by P. Fritz and D. Williams (Toronto: Hakkert, 1973), pp. 125-147.

professional class of lawyers, doctors, lesser nobility and clergymen had become powerful.

Enlightenment thought spread to Scotland through its legal and medical links with Continental countries.⁴⁸ The Scottish legal system, discussed in the next chapter, was also more receptive to those changes. Scottish lesser nobility had been interested in scientific advances since the eighteenth century. William Cullen, an eighteenth-century scientist, had Scottish noble patrons to advance his academic career.⁴⁹ Since the number of private patients was limited, many Edinburgh doctors were also interested in scientific innovations, and were eager to contribute to them to enhance their reputation and gain another source of income.⁵⁰ The Faculty of Advocates for Scottish lawyers made knowledge of forensic medicine a prerequisite for admission in 1856.⁵¹ From the late nineteenth century, the number and type of laboratories increased. For instance, the Laboratory of the Royal College of Physicians was established in Edinburgh in 1887 to provide research facilities for the general local medical community, and its staff could perform tests on pathological specimens.⁵²

Unlike the situation in England, there was more support for medical jurisprudence in the Scottish universities, which allowed the subject to be recognised as a discipline in the nineteenth century. Andrew Duncan Sr. introduced medical jurisprudence to Scotland from the Continent in around 1790. After Duncan became the Professor of the Institutes of Medicine at the University of Edinburgh, he introduced some principles of medical jurisprudence through the first publication of his *Heads of Lectures on Medical Jurisprudence* in 1792.⁵³ Although he failed to establish a chair of medical jurisprudence at the University of Edinburgh in 1798, Duncan was ultimately successful in 1807 after securing his close friend Henry Erskine's support, who was appointed as Lord

⁴⁸ White, 'Training Medical Policemen', pp. 145-147.

⁴⁹ J. V. Golinski, 'Utility and Audience in Eighteenth-Century Chemistry: Case Studies of William Cullen and Joseph Priestley', *British Journal for the History of Science* 21, no. 1 (1988), 5.

⁵⁰ Steve Sturdy, 'Knowing Cases: Biomedicine in Edinburgh, 1887-1920', *Social Studies of Science* 37, no. 5 (2007), 663-664.

⁵¹ Watson, *Forensic Medicine*, p. 61.

⁵² Sturdy, 'Knowing Cases', 660, 663-664.

⁵³ White, 'Training Medical Policemen', p. 146.

Advocate under the Whig government.⁵⁴ As the Lord Advocate was the main legal officer with a seat in Parliament who was responsible for all Scottish business before 1885, Erskine was able to garner support for the chair in Parliament.⁵⁵ Unlike in England, medical jurisprudence consisted of both forensic medicine and public health. This combination stabilised the position of forensic medicine as a new discipline after its initial introduction into Scotland. The University of Glasgow also established a chair of medical jurisprudence in 1839 in a political move to initiate university reform. While the creation of the chair of medical jurisprudence was controversial, medical jurisprudence was already a popular subject when it became compulsory in Scotland in 1833.⁵⁶ The quality of teaching appears to have been superior to that in England. Instead of receiving purely theoretical training, Smith recalled that his mentor Harvey Littlejohn ‘had a dramatic style of lecturing, and used to carry out reconstructions of his cases before us students.... [H]e encouraged me to... take an active, practical interest in the pathology of injury’.⁵⁷

In his autobiography of 1964, John Glaister Jr. remarked retrospectively from a time when the team approach was the norm that Scottish medical detectives like himself were ‘trained to carry out both the bulk of the work involved in scientific aids and necessary pathology’, while these same tasks were distributed between the Home Office scientists and the pathologists in England.⁵⁸ While Glaister’s observation suggests that Scottish medical detectives were more self-reliant, the opposite appears to have been the case. Scottish medical detectives understood the need for scientists to specialise and develop a team approach because their appreciation of the variety and the unexplored areas within forensic medicine was more complete. Indeed, Glaister ‘was convinced that a new phase in medico-legal work was dawning on a horizon of new lines of approach developed or waiting to be developed’, which made teamwork important.⁵⁹ In contrast,

⁵⁴ Crowther and White, *On Soul and Conscience*, p. 10.

⁵⁵ White, ‘Training Medical Policemen’, pp. 147-148.

⁵⁶ Watson, *Forensic Medicine*, p. 58.

⁵⁷ Smith, *Mostly Murder*, p. 39.

⁵⁸ Glaister, *Final Diagnosis*, p. 218.

⁵⁹ *Ibid.*, p. 79.

although Spilsbury might have been aware of the impossibility for a pathologist to be an expert on all other scientific matters, he behaved like an omnipotent medical expert nevertheless. As discussed above and in Chapter Two, Spilsbury went beyond his expertise in trials.

Unlike Spilsbury and other English medical detectives, the Glaisters and Smith had stable bases at the Universities of Glasgow and Edinburgh respectively for research and support purposes. As English pathologists and Home Office Analysts usually did not collaborate within the same institution, it was more difficult for English medical detectives to work in teams. Smith was deeply loyal to his university and especially his department, as he prioritised his work at the university over the attainment of public prestige. An unknown obituarist remarked that '[Smith] was not made a great public figure as Spilsbury was: his repute was greater, for it lay with his colleagues.'⁶⁰ Since universities, rather than apprenticeship systems, provided formal standardised training in medical jurisprudence, forensic medicine was an integral part of the medical sciences. Forensic medicine was conventional and the pay was secure enough in Scotland that dynasties, a common trend in the medical profession before the National Health Service, were also evident among forensic scientists so the younger generation could assist and succeed the practice. Other than the Glaisters, examples include the Duncans and the Littlejohns at the University of Edinburgh.⁶¹

As a result of greater governmental support for medical jurisprudence and the establishment of a discipline in Scotland, Scottish medical detectives shared a greater sense of unity. While Scottish experts like John Glaister Sr. or even Smith displayed characteristics similar to English medical detectives, they were not quite lone experts. Like Spilsbury, both Glaister and Smith were the leaders, or at least the coordinators, of their teams in investigating crime. While Glaister was arguably a lone expert as he was stubborn in his opinions, he favoured a team approach by

⁶⁰ 'Sir Sydney Smith: Forensic Expert', *Times*, May 10, 1969, 10.

⁶¹ Crowther and White, *On Soul and Conscience*, p. 53.

encouraging scientific research in the forensic science department at the University of Glasgow.⁶² Smith also downplayed other experts' role in the criminal investigations he later recounted. For instance, although Smith consulted Professor Thomas Mackie regarding the bacteria found on the Donalds' towels in the Aberdeen child murder, (discussed in Chapter Two), Mackie was not mentioned in an article on the subject from the *Police Journal* or in *Mostly Murder*. However, Smith mentioned the involvement of the University of Edinburgh's Department of Bacteriology in the case.⁶³ Although rivalries existed between experts from the Universities of Edinburgh and Glasgow, they still cooperated in certain major cases. For example, Littlejohn collaborated with Glaister in the prosecution's shooting experiments in the Merrett trial.⁶⁴ Similarly, Smith and John Glaister Jr. maintained an amiable professional working relationship. They co-authored two editions of *Recent Advances in Forensic Medicine* in the 1930s,⁶⁵ working together as they 'attempted to bring together the modern views and hypotheses on this subject'.⁶⁶

Conclusion

The ways British medical detectives operated in the early twentieth century were compared in this Chapter, which has not been done in existing secondary literature. This contextualises the discussions in Chapter Two and illustrates the reasons for Smith's impact on other medical detectives more clearly. In tracing the development of forensic medicine in England and Scotland, it is clear that the extent British medical detectives were lone experts varied between the different traditions. The English legal system and the government's aloofness toward the crime investigation process meant there was little support for medical experts and forensic medicine as a discipline. In contrast, the Scottish professional class's support for scientific innovations meant

⁶² Ibid., p. 40.

⁶³ Smith, *Mostly Murder*, p. 216; Sydney Smith, 'Studies in Identification and Reconstruction. No. 7', *Police Journal* 13 (1940), 284.

⁶⁴ Roughead, *The Trial of John Donald Merrett*, pp. 155, 176.

⁶⁵ Duvall, 'Forensic Medicine in Scotland', 80.

⁶⁶ Sydney Smith and John Glaister Jr., *Recent Advances in Forensic Medicine* (London: J & A Churchill, 1931), p. v.

the environment was more favourable for medical jurisprudence to become a discipline. Consequently, the English medical detectives fit into the lone expert model more than their Scottish counterparts, as English experts tended to be more competitive. Conversely, while some Scottish medical detectives displayed some characteristics of the lone expert, they appreciated the value of the team approach more completely. Smith, whose career is explored further in Chapter Two, was one such expert who affirmed the importance for scientists to work in a team.

Chapter Two

Sir Sydney Smith's cases and actions demonstrated his willingness to collaborate with others and contributed to the adoption of the team approach by British experts in crime investigations.

While Smith's contribution was not unique, his actions nevertheless made a difference. Although Smith displayed characteristics of the 'lone expert' at times, he was one of the transitional medical detectives who moved towards a team approach in the scientific detection of crime. Because medical detectives like Smith increasingly used a team approach to solve crimes, scientists started to work in teams in crime investigations.

Smith willingly collaborated with other medical detectives despite appearing as if he was acting alone sometimes. He was trained under the Scottish system, which, as discussed previously, offered an environment conducive to cooperation between experts. The nature of the Scottish legal system and the speed with which forensic medicine and science developed in Scotland also necessitated collaboration between Scottish scientists. This chapter discusses the ways in which Smith worked with others, through his significant cases and the dissemination of knowledge among his students. Smith's influence on the medical detectives' image will be explored further in this chapter. His writings and legacy demonstrated the principles he believed scientists should adhere to. Smith also influenced future English pathologists' attitude towards collaboration with other experts and guided the creation of certain organisations devoted to forensic medicine and science.

Why Smith Collaborated with Others

Collaboration was the norm under the highly centralised Scottish criminal investigation system. The Scottish legal system was better positioned to accept scientific innovations than its English

counterpart. Scotland had legally trained officials, rather than coroners, to direct the process.¹ The procurator fiscal, a lawyer that investigated all cases of suspicious deaths in a given district,² directed all public inquiries and coordinated the investigations overall.³ Procurators fiscal could require medical witnesses to examine objects which were relevant to the case and perform scientific tests.⁴ In serious cases, the procurator fiscal could instruct two doctors to conduct a full post-mortem and compile a joint written report stating ‘their conclusion as to the cause of death founded on the facts observed’.⁵ Therefore, unlike in England where financial constraints restricted the number of medical witnesses involved in inquests,⁶ two doctors usually cooperated to meet the Scottish legal requirement of scientific examination. John Glaister Sr. stated in the 1915 edition of his textbook that ‘[i]t is absolutely necessary where death has been due to culpable violence by an assailant, that two medical men should be named in the warrant [to perform the post-mortem]’.⁷ As both the 1931 and 1945 editions of Smith’s *Forensic Medicine* stated that ‘[the procurator fiscal] generally conjoins two medical men for [post-mortem examinations in serious cases]’, this reflected the frequency of this practice.⁸ The Scottish system also allowed the circulation of medical reports and samples of physical evidence between scientists, which ensured that experts could support doctors throughout Scotland who might not have the equipment or the expertise to determine the cause of death in serious investigations. For instance, in the murder of Lena Muir in 1933, two doctors performed the post-mortem, while Smith’s department at the University of Edinburgh received physical evidence such as bloody clothing. Smith conducted the blood grouping tests and gave opinions about the post-mortem

¹ Duvall, ‘Forensic Medicine in Scotland’, 69.

² Sydney Smith, *Forensic Medicine: A Textbook for Students and Practitioners* (London: J & A Churchill, 1925), p. 2.

³ Duvall, ‘Forensic Medicine in Scotland’, 38-39.

⁴ John Glaister, Sr., *A Text-book of Medical Jurisprudence and Toxicology*, 3rd ed. (Edinburgh: E & S Livingstone, 1915), pp. 32-4.

⁵ Smith, *Forensic Medicine*, p. 2.

⁶ Watson, *Poisoned Lives*, p. 157.

⁷ Glaister, *A Text-book of Medical Jurisprudence*, 3rd ed., p. 34.

⁸ Sydney Smith, *Forensic Medicine: A Textbook for Students and Practitioners*, 3rd ed. (London: J & A Churchill, 1931), p. 4; Sydney Smith, *Forensic Medicine: A Textbook for Students and Practitioners*, 8th ed. (London: J & A Churchill, 1945), p. 7.

itself after examining sections of the victim's skull.⁹ Smith was trained to work under the Scottish legal system. In 1913, he assisted Littlejohn in his first major case where their evidence convicted Patrick Higgins of murdering his sons.¹⁰ As evident in the Muir case above, Smith continued to follow the Scottish system for cooperation between scientists twenty years later.

Medical detectives also had to collaborate because forensic medicine developed rapidly. In the beginning of the twentieth century, the professors of medical jurisprudence had to know every aspect of forensic science. For instance, John Glaister Sr. claimed expertise in 'sudden death, sexual perversions, elementary psychology, problematic consummation of marriage, abortion, rape, toxicology, fingerprints, drunkenness, the construction of privies and the disposal of effluent'.¹¹ However, as new areas of forensic science developed, expertise was divided between scientists, technicians and doctors.¹² State medicine, or public health, separated from forensic medicine at the end of the nineteenth century. Psychiatry absorbed psychology from medical jurisprudence.¹³ Smith pioneered the field of forensic ballistics while he was working in Egypt in the early twentieth century, around the same time as Alfred Lucas, who took a chemical approach to the subject, and Calvin Goddard in the United States.¹⁴ Specialisations in forensic science and medicine required equipments and knowledge beyond the post-mortems.¹⁵ Throughout his career, Smith was aware of the rapid developments in forensic medicine and science and the necessity of specialised scientific expertise in solving crimes. He encouraged a team approach when he dispensed useful information on the subject of identification and firearms in the *Police Journal*, a specialised journal intended for professional readers. He published twenty articles

⁹ Duvall, 'Forensic Medicine in Scotland', 57-58.

¹⁰ Odell, *Medical Detectives*, p. 67.

¹¹ Crowther and White, *On Soul and Conscience*, p. 26.

¹² *Ibid.*, p. 3.

¹³ Sydney Smith, 'The History and Development of Forensic Medicine', *British Medical Journal* 1, no. 4707 (1951), 606.

¹⁴ Odell, *Medical Detectives*, pp. 74-76; Alfred Lucas, *Forensic Chemistry* (London: E. Arnold & Co., 1921), pp. 42-54; Lisa Steele, 'Ballistics', in *Science for Lawyers*, ed. by Eric York Drogin (Chicago: American Bar Association, 2008), pp. 1-4.

¹⁵ Burney and Pemberton, 'The Rise and Fall', 1320.

between 1928 and 1944.¹⁶ Smith displayed the same attitude when he later remarked in *Mostly Murder* that 'co-operation is often needed from the botanist, the zoologist, the entomologist, the geologist, and other specialists.'¹⁷

How Smith Collaborated with Others

Smith worked on several cases where collaboration with other scientific experts was important. In 1933, Dr. Claude Avarne of the General Hospital at St. Helier in Jersey was accused of performing a criminal abortion on an unwed mother by trying to remove the foetus with instruments. While the mother survived, the child was stillborn. Avarne would have committed a crime if the foetus was alive in the womb when he tried to abort it. He contended that the foetus was dead; therefore, he conducted the operations to save the mother's life.¹⁸ From the beginning, Smith collaborated with Professor Murray Drennan of the University of Edinburgh's Pathology Department to make microscopic sections from the tissues of the placenta and foetus. Despite their conclusion that Avarne's diagnosis was probably correct, Smith realised that he had little clinical experience even though he wrote on the subject of pregnancy and birth in his textbook.¹⁹ Therefore he enlisted the assistance of Dr. Aleck Bourne, a leading gynaecologist. Bourne examined the slides and came to similar conclusions in the presence of the star prosecution medical witness, Spilsbury.²⁰ While other senior doctors also testified that the foetus was alive during the operations, a number of them praised Avarne's abilities and his integrity. However, Spilsbury criticised the clinical treatment performed by Avarne in court.²¹ In venturing outside his expertise, Spilsbury became an easy target for the defence counsel and Bourne after Spilsbury was made to admit under cross-examination that he last treated a pregnant woman twenty years

¹⁶ See, e.g., Sydney Smith, 'The Identification of Firearms and Projectiles', *Police Journal* 1 (1928), 411-423; Sydney Smith, 'Studies in Identification. No. 3', *Police Journal* 12 (1939), 274-285; Sydney Smith, 'Studies in Identification and Reconstruction. No. 14', *Police Journal* 17 (1944), 25-28.

¹⁷ Smith, *Mostly Murder*, p. 38.

¹⁸ Odell, *Medical Detectives*, pp. 89-90; Rose, *Lethal Witness*, p. 230.

¹⁹ Smith, *Forensic Medicine*, 3rd ed., pp. 306-332.

²⁰ Smith, *Mostly Murder*, p. 200.

²¹ Odell, *Medical Detectives*, p. 91.

before. Bourne publicly denounced Spilsbury's opinions by declaring that 'when [Spilsbury] starts to talk about the symptoms and diagnosis of living things I cease to listen.'²²

Avarne's trial showed the differences between the approach taken by Scottish experts and that by the English. Smith's idea to seek advice from a prominent gynaecologist to bolster the defence case not only secured a favourable verdict for Avarne, he also demonstrated the importance of seeking other experts' help where necessary. Unlike Spilsbury, who did not expect his opinions to be questioned given his reputation, Smith did not rely solely on his experiences even though he was a respected professor of forensic medicine. He knew that his limited clinical experience would not be sufficient for this case, and he was not ashamed to acknowledge this lack of expertise. This was contrary to the training of lone experts. As demonstrated in Chapter One, English medical detectives tended to assert their opinions forcefully and ignore challenges to their views. In this case, although Spilsbury had little clinical experience in gynaecology, he still 'considered himself competent' in the subject.²³ Smith's approach to the preparation of medical evidence in this case thus departed from the lone expert approach.

Smith collaborated with other experts on a larger scale in solving the Aberdeen child murder in 1934. A schoolgirl, Helen Priestly, went missing after she ran an errand. A manhunt in a stormy night ensued. The girl's body was discovered in a sack sitting in the recess under the stairs in her own tenement early next morning. The murderer clearly lived in the same building because the sack was dry and there were no muddy footprints leading to and from the entrance of the tenement. Alexander and Jeannie Donald, the Priestlys' neighbours, were arrested after bloodstains were found in their home. However, because there was no further evidence, the procurator fiscal asked Smith to conduct a scientific investigation to bolster the case against the Donalds.²⁴ Smith achieved this by linking hair, fibre, bacteria and bloodstains between the

²² 'Sir B. Spilsbury', *Daily Mail*, November 10, 1933, 3.

²³ Rose, *Lethal Witness*, p. 231.

²⁴ Odell, *Medical Detectives*, pp. 92-94; Smith, 'Studies in Identification and Reconstruction. No. 7', 273-274.

Donalds' home and Helen's body. Although the results were inconclusive regarding the cinders found in the sack, Smith tested the cinders in every scientific test possible, including having them X-rayed by the Department of Mines at the University of Edinburgh.²⁵ Smith observed that some hairs in the sack showed characteristics identical to Jeannie Donald's hair. While collaboration between experts was not mentioned in the 1940 *Police Journal* article related to the case or his autobiography, Smith sent the hair samples to John Glaister Jr., an expert in identification through hairs, for a second opinion and received a favourable response.²⁶ Smith and his team also compared the household fluff found in the sack, which was a combination of over two hundred pieces of materials from wool fibres to cat hairs. They compared them with similar fluffs taken from several homes in the same tenement, and found twenty-five complete matches between the fluff in the sack and that from the Donald's home. No other households had similar number of matches.²⁷ Since Helen had a rare type of intestinal bacteria, Smith enlisted the Department of Bacteriology's assistance, in particular Professor Mackie, to examine the bloodstains found on one of the Donalds' washing-cloths.²⁸ Smith suspected that Helen's blood would be contaminated by her intestinal bacteria because her intestinal canal was ruptured, and the test result confirmed the bacteria's presence on the towel.²⁹

While Smith was the team's leader because he ensured all the investigative possibilities were exhausted, this case demonstrated the way different laboratory specialists worked together to establish the connection between Helen's murder and the Donalds' home. Unlike Spilsbury, who dominated Robert Churchill in the Fox case, Smith was respectful to the people he worked with. As an unknown obituarist stated, '[Smith] would listen as alertly – and as courteously – to the

²⁵ Smith, *Mostly Murder*, p. 213.

²⁶ Crowther and White, *On Soul and Conscience*, pp. 79-80.

²⁷ Smith, *Mostly Murder*, pp. 214-215.

²⁸ Odell, *Medical Detectives*, p. 96.

²⁹ Smith, *Mostly Murder*, p. 216.

local constable... as to those of high rank or social eminence.’³⁰ Smith was aware of other types of sciences and their importance. He used the Aberdeen child murder case in the *Police Journal* article to ‘[illustrate] the use which may be made of laboratory workers in [reconstructing the crime]’.³¹ He thus showed how scientists could work together, with the view that similar collaborations could be repeated in the future. Although Smith did not specifically mention other scientists’ involvement in *Mostly Murder* and the *Police Journal* article, this could be because each scientist’s individual contribution was relatively small. Indeed, John Glaister Jr. did not mention the Aberdeen child murder in his autobiography either, which suggests that he was not significantly involved in the case. This case demonstrated another move towards the team approach given the scale of collaboration between the scientists involved.

Smith also participated in the scientific investigation behind the Ruxton murders. In 1935, dismembered human remains were found in a ravine in Moffat, Scotland.³² They were traced to Dr. Buck Ruxton’s home in Lancashire, England. Ruxton’s wife Isabella and maid Mary Rogerson were said to have ‘gone away on a holiday to Edinburgh’.³³ The prosecution had to establish the bodies’ identities to prove Ruxton’s guilt. The process of reassembling the bodies and linking them to Ruxton’s house was long and tenuous. John Glaister Jr., who led the investigation, recruited two dentists, a professor of anatomy, and people whose expertise ranged from textiles to photography. Smith helped estimate the length of time it would have taken an experienced medical professional to dismember two bodies in the manner it was done.³⁴ In Ruxton’s trial, Smith confirmed other doctors’ findings regarding the gender and age of the victims, while adding other observations. For instance, Smith remarked that one victim’s fingernails were scratched in a

³⁰ ‘Sydney A. Smith, C.B.E., M.D., LL.D., F.R.C.R.Ed., D.P.H.’, *British Medical Journal* 2, no. 5654 (May 1969), 452.

³¹ Smith, ‘Studies in Identification and Reconstruction. No. 7’, 273.

³² ‘Women Find Two Mutilated Bodies’, *Daily Mail*, September 30, 1935, 13.

³³ Blundell and Wilson, *Trial of Buck Ruxton*, p. xxi.

³⁴ Crowther and White, *On Soul and Conscience*, pp. 86-88, 90.

way usually seen in a person who did manual labour.³⁵ While this case was not the first where scientists collaborated to solve murders, the Ruxton case had a greater impact in England both because of the media attention on the murders' gruesomeness and the case's cross-border nature. The trial was well-publicised, with almost daily updates on the developments, which displayed the team approach to an English audience.³⁶

The Ruxton case had, perhaps for the first time, introduced the forensic team to England as a necessary practice for solving crimes.³⁷ The *British Medical Journal* noted that '[u]ndoubtedly the most interesting feature of the case is the manner in which Professor Glaister and his colleagues, presented with... human fragments... were able so accurately to reconstruct the persons from which they derived'.³⁸ Although Glaister was treated as the team's leader, this sentence attributed the achievement to a group of scientists. Smith also showed that he could work as a team member rather than its leader, which demonstrated his ability to cooperate with others. After Ruxton was convicted, it was announced in the same month that twenty Lancashire senior police officers would attend a ten-day training course 'in the methods employed in Scotland in criminal investigation and medical jurisprudence.' This course was organised because of the 'close cooperation between the Glasgow Criminal Investigation Department and the Lancashire Police in the investigations into the Moffat ravine crime'.³⁹ This confirmed that collaboration became a distinctive feature of crime investigation after the trial.

Smith was also willing to collaborate with others through his position as a teacher of forensic science. He trained and worked with younger generations of medical detectives. By sharing his expertise through effective teaching, Smith encouraged a team approach as he dispersed knowledge and interacted with other scientists in a way Spilsbury did not achieve on any similar

³⁵ 'Ruxton Case: Concluding Medical Evidence', *Times*, December 13, 1935, 4.

³⁶ See, e.g., 'Ruxton Trial: Evidence on Sixth Day', *Times*, March 9, 1936, 21; 'Ruxton Trial: Chief Constable's Evidence', *Times*, March 10, 1936, 22; 'Dr. Ruxton on Trial: Professor Glaister Cross-Examined', *Times*, March 11, 1936, 4.

³⁷ Crowther and White, *On Soul and Conscience*, p. 92.

³⁸ 'The Lancaster Murder Trial', *British Medical Journal* 1, no. 3930 (May 1936), 913.

³⁹ 'Criminal Investigation in Scotland', *Times*, March 20, 1936, 11.

scale. Smith, not Spilsbury, inspired the younger English pathologist, Dr. Keith Simpson.⁴⁰ Smith later worked with former students in solving new medical questions. Although the collaboration was outside the scope of Smith's job with the World Health Organisation, he worked with Dr. G. W. de Saram, Professor of Forensic Medicine at Colombo University, in a case to determine which of two people shot and killed a man. They proved that the first shot could have caused all of the victim's injuries, so the second person who fired at the victim might not have been responsible at all.⁴¹ In contrast, while Spilsbury gave lively practical demonstrations on his subject, he was generally regarded as a dull lecturer.⁴² Although he helped his students and other practitioners as well, this seemed to be rare. Browne and Tullett only note one occasion where Spilsbury assisted an unknown general practitioner with a case of criminal abortion.⁴³

Smith wrote textbooks for forensic scientists in training. His first textbook, *Forensic Medicine and Toxicology*, was published in 1925, while he was teaching at the School of Medicine at Kasr el Aine in Egypt.⁴⁴ Smith's *Forensic Medicine* went through several editions, and it was on the list of recommended books for prosecutors and police officers who took a short course on scientific crime detection at the Scientific Crime Detection Laboratory of Northwestern University in the United States.⁴⁵ Smith edited Taylor's *Principles and Practice of Medical Jurisprudence* and kept the text updated.⁴⁶ Smith's contribution was such that the *Times* reported in his obituary that '[h]is lasting reputation will undoubtedly lie in his own well-known textbook *Forensic Medicine*'.⁴⁷ In his instructions for future medical detectives, Smith emphasised the importance of teamwork in solving crimes. For example, he advised 'a close relationship between the police, the medical officer and the laboratory offers the best chance of success' in an article published in the

⁴⁰ Simpson, *Forty Years*, pp. 32-33.

⁴¹ Smith, *Mostly Murder*, p. 265.

⁴² Browne and Tullett, *Bernard Spilsbury*, pp. 198-199.

⁴³ *Ibid.*, p. 191.

⁴⁴ Odell, *Medical Detectives*, p. 76.

⁴⁵ 'Laboratory Methods of Scientific Proof: Assignments', 1936, Law School (17) Scientific Crime Detection Laboratory: General- for Class of Summer Session, Northwestern University Archives, Illinois. I am grateful to Dr. Heather Wolfram for this information.

⁴⁶ 'Sydney A. Smith, C.B.E., M.D., LL.D., F.R.C.R.Ed., D.P.H.', 452.

⁴⁷ 'Sir Sydney Smith', 10.

American Journal of Police Science.⁴⁸ Smith also took his own advice. The *British Medical Journal* noted in Smith's obituary that he was 'keenly aware [of] the need for a close association between the purely medical aspects of forensic inquiries and those para-medical and other scientific investigations which are so closely complementary.'⁴⁹ Thus he encouraged scientists to work together. Smith's instructions for future medical detectives to work in teams changed the manner forensic investigations were practised.

Smith's Influence on Others

Newspapers noted Smith's willingness to work with others during his lifetime. While earlier newspapers focused on significant individuals, such that the words 'Sir B. Spilsbury' were enough for a headline, they picked up a new angle in showing cordiality between medical detectives after the Ruxton case.⁵⁰ Although newspapers continued to look at individual medical detectives closely, as in the *People's* series which looked at Smith's significant cases, Smith's actions and professional writings affected how the public regarded him.⁵¹ For instance, a 1949 article was accompanied by a photograph of Smith, Glaister and Professor J. C. Brash with the caption 'The Men Most Dreaded by Murderers'.⁵² Smith was a transitional figure who exhibited certain traits of the celebrity pathologist like Spilsbury, yet he started to break out from that model at the same time to encourage scientists to work in forensic teams.

Smith's writings and actions shaped the principles he believed in when he was a practising medical detective. From the *Police Journal* articles published during his working career, Smith

⁴⁸ Sydney Smith, 'Injuries from Firearms', *American Journal of Police Science* 1, no. 6 (November-December 1930), 603.

⁴⁹ 'Sydney A. Smith, C.B.E., M.D., LL.D., F.R.C.R.Ed., D.P.H.', 452.

⁵⁰ 'Sir B. Spilsbury' *Daily Mail*, January 17, 1925, 9.

⁵¹ Duvall, 'Forensic Medicine in Scotland', 222. However, it should be noted that this series aimed to promote *Mostly Murder*, therefore it was likely to present Smith as a lone expert.

⁵² 'The Master Witness', *Sunday Mail*, January 9, 1949, 2, quoted in Duvall, 'Forensic Medicine in Scotland', 221.

clearly expected scientists to work together.⁵³ In the 1931, 1938 and 1945 editions of *Forensic Medicine*, Smith suggested without fail that '[i]f the doctor is in doubt about a case of suspected poisoning, he should invariably discuss the case with an experienced consultant.' This would not only prevent death if the patient was indeed being poisoned, but also detect crimes and bring the perpetrators to justice.⁵⁴ Smith also used *Mostly Murder* to further solidify the principles he followed when he was working.⁵⁵ Duvall suggests that Smith constructed forensic medicine's image by recounting his cases in his autobiography. Smith exhibited ideal traits for medical detectives, such as open-mindedness and impartiality.⁵⁶ As discussed in Avarne's case, Smith sought the opinions of other experts in fields he did not specialise in.⁵⁷ Thus Smith contrasted favourably against other medical detectives like Spilsbury.⁵⁸ While Spilsbury was dogmatic in his beliefs, according to an anonymous obituarist, Smith 'gave to the pronouncements of others just that degree of respect to which they were entitled'.⁵⁹ By showing his willingness to accept others' views and collaborate with them in *Mostly Murder*, Smith emphasised the importance for medical detectives to work in teams. He acknowledged various scientists' work in the Ruxton case such as the superimposition of the photograph of a skull on a photograph of Mrs. Ruxton by Brash with the assistance of Detective Constable Stobie. Smith further remarked that the Ruxton case 'was a good example of that teamwork which is so essential in criminal investigation'.⁶⁰ This attitude is supported by Smith's obituary in the *Times*: 'He had two fundamental assets in personal

⁵³ See, e.g., Sydney Smith, 'Studies in Identification. No. 1', *Police Journal* 11 (1938), 422-427; Sydney Smith, 'Studies in Identification. No. 4', *Police Journal* 12 (1939), 403-408; Sydney Smith, 'Studies in Identification, No. 6', *Police Journal* 13 (1940), 148-151; Smith, 'Studies in Identification, No. 7', 273-287; Sydney Smith, 'Studies in Identification and Reconstruction. No. 10', *Police Journal* 14 (1941), 135-148; Smith, 'Studies in Identification and Reconstruction. No. 14', 25-28.

⁵⁴ Smith, *Forensic Medicine*, 3rd ed., p. 419; Sydney Smith, *Forensic Medicine: A Textbook for Students and Practitioners*, 6th ed. (London: J & A Churchill, 1938), p. 423; Smith, *Forensic Medicine*, 8th ed., p. 436.

⁵⁵ Duvall, 'Forensic Medicine in Scotland', 214.

⁵⁶ *Ibid.*, 237.

⁵⁷ Smith, *Mostly Murder*, p. 200.

⁵⁸ Duvall, 'Forensic Medicine in Scotland', 237.

⁵⁹ 'Sydney A. Smith, C.B.E., M.D., LL.D., F.R.C.R.Ed., D.P.H.', 452.

⁶⁰ Smith, *Mostly Murder*, p. 234.

relationships that undoubtedly carried him far... [one of which was] a plain desire to achieve some accord with his colleagues that meant skill in negotiation.⁶¹

Smith's cases and enthusiasm for teaching also affected younger generations of English medical detectives. Simpson noted in his autobiography that when he started out as a pathologist, Spilsbury 'had for twenty years been head and shoulders above anyone in the country in this branch of pathology'. Simpson remembered Spilsbury's aloofness vividly, as he remarked that Spilsbury 'never troubled to speak to his fellows.... [H]e did not appear to welcome... requests [for advice].... [H]e never took post-graduate visitors on his "rounds" or in court.' Subsequently, Simpson and other younger English pathologists found Spilsbury unapproachable. Simpson confessed 'I had a sneaking feeling [Spilsbury] wasn't pleased to see me appear increasingly frequently at court to give evidence.... [H]e never actually spoke a word of welcome.' Therefore the younger generations of English medical detectives looked elsewhere to find appropriate guidance, leading Simpson, Francis Camps and Donald Teare to look to Smith. '[Smith] had everything the cold Spilsbury lacked. We three young pathologists found in him all the warm interest in young tyros that Spilsbury failed to show.' Smith assisted younger scientists around the world who sought advice from him.⁶² He became known as 'The Patriarch' to many of his fellow forensic pathologists.⁶³ The different impact Spilsbury's and Smith's teaching had on their students was evident in their respective obituaries. While the *Times* mentioned Spilsbury's various lectureships in his obituary, the obituarist described Smith's teaching career with more genuine warmth: 'His bluff paternal warmheartedness [sic], generous attitude towards young men and tolerance of their high spirits (which made him such a well loved Dean) were unquenchable'.⁶⁴ Simpson defied the English tradition exemplified by Spilsbury when he embraced the practice of collaboration, which was consistent with contemporary scientific norms.

⁶¹ 'Sir Sydney Smith', 10.

⁶² Simpson, *Forty Years*, pp. 30, 32-33.

⁶³ Odell, *Medical Detectives*, p. 109.

⁶⁴ 'Sir Bernard Spilsbury: Diagnostician of Crime', *Times*, December 19, 1947, 7; 'Sir Sydney Smith', 10.

Unlike Spilsbury who was often photographed alone, Simpson was photographed with his secretaries.⁶⁵ In 1949, the *Daily Mail* printed a photo of Simpson and his secretary Jean Scott-Dunn sifting through the debris at George Haigh's workshop for traces of the victim's remains.⁶⁶

Smith supported the establishment of medico-legal laboratories, which could facilitate collaborations between medical detectives. In the mid-1930s, Lord Hugh Trenchard, the Metropolitan Police Commissioner, proposed to build the Metropolitan Police Laboratory, a specialist medico-legal laboratory, in London. Although Spilsbury supported the plan and agreed with the idea of collaboration, he did nothing about it.⁶⁷ Instead, Spilsbury encouraged Lord Trenchard to confer with the Scottish medical detectives.⁶⁸ After the Metropolitan Police Laboratory's opening in 1935,⁶⁹ the Advisory Committee on the Scientific Investigation of Crime, formed to oversee the laboratory's development, was ultimately short-lived. Norman Ambage and Michael Clark argue that this was partly because Spilsbury and other Advisory Committee members who had an interest in the scientific side of crime investigations made little contribution to the discussions.⁷⁰ In contrast, Smith believed that a specialist laboratory would be advantageous in that it would be available for day-to-day consultation, and he produced plans for developing the medico-legal laboratory after Lord Trenchard approached him.⁷¹ While Simpson suggested that Smith refused to become the first director of the Metropolitan Police Laboratory because he was committed to his University of Edinburgh students, Crowther and White's argument that Smith thought the pay was too low seems closer to the truth.⁷² But since both reasons were valid and not mutually exclusive, it may be argued that a combination of reasons

⁶⁵ Burney and Pemberton, 'The Rise and Fall', 1320.

⁶⁶ 'Six "Acid" Murders', *Daily Mail*, March 2, 1949, 1.

⁶⁷ Rose, *Lethal Witness*, pp. 232-233.

⁶⁸ Norman Ambage and Michael Clark, 'Unbuilt Bloomsbury: Medico-Legal Institutes and Forensic Science Laboratories in England between the Wars', in *Legal Medicine in History*, ed. by Michael Clark and Catherine Crawford (Cambridge: Cambridge University Press, 1994), p. 299.

⁶⁹ Watson, *Forensic Medicine*, p. 133.

⁷⁰ Ambage and Clark, 'Unbuilt Bloomsbury', pp. 302, 304.

⁷¹ Smith, *Mostly Murder*, pp. 220-221.

⁷² Simpson, *Forty Years*, p. 33; Crowther and White, *On Soul and Conscience*, p. 83; Letter from Hugh Trenchard to Sydney Smith, June 23, 1934, Sydney Smith Papers, SMS1/1/37, Royal College of Physicians Edinburgh, Edinburgh. I am grateful to Dr. Heather Wolfram for this information.

led Smith to stay in Scotland. Unlike Spilsbury's lack of interest, Smith continued to advocate for the establishment of an 'Institute of Forensic Medicine and Criminology' in 1951 to facilitate medico-legal work.⁷³

Smith also partially inspired the formation of the British Association of Forensic Pathologists, now known as the Association in Forensic Medicine. Before the 1940s, English medical detectives often worked alone. Having looked to Smith as a model, Simpson and his colleagues felt that the English experts' aloof manner was 'both unnecessary and a little risky'. They realised that they needed a forum where they could discuss difficult cases. Simpson founded the Association in 1950, and, together with other medical detectives, they invited Smith to be the first President as he was the most experienced and most academically recognised forensic pathologist at the time.⁷⁴ Smith worked with the younger generation of pathologists in the early days of the Association to debate problems in forensic medicine. As its first president, he influenced the way meetings were conducted. The Association's second meeting included the reading of six papers and 'a critical and lively discussion.'⁷⁵ Smith also encouraged contribution from others in their fourth meeting.⁷⁶ Although mid-twentieth-century English pathologists maintained overall command of the scientific side of criminal investigations, they were not lone experts.⁷⁷

Conclusion

While Smith was a product of his environment, he went beyond merely affirming the Scottish tradition of medical jurisprudence in his career. Through his actions in complex cases and his textbook instructions, Smith shaped the team approach in British forensic medicine, which was a predominantly individualised profession in England. In doing so, Smith established himself as a transitional medical detective who respected and accepted other scientists' opinions where they

⁷³ Ambage and Clark, 'Unbuilt Bloomsbury', p. 306.

⁷⁴ Simpson, *Forty Years*, p. 230.

⁷⁵ 'Medical News', *British Medical Journal* 2, no. 4731 (September 1951), 619.

⁷⁶ 'Unsolved Medico-Legal Problems', *British Medical Journal* 2, no. 4745 (December 1951), 1458-1459.

⁷⁷ Burney and Pemberton, 'The Rise and Fall', 1320-1321.

were justifiable. Smith's influence was mainly evident in his written work, his students, and the institutions he helped conceive and nurture. His work anticipated the contemporary reality that the forensic team is now necessary for solving crimes.

Conclusion

Sir Sydney Smith helped changed the way medical detectives worked in crime investigations.

Chapter One of this dissertation examined the existing literature on the development of different types of medical detectives in the context of crime investigations. Factors such as the nature of the English legal system and limited governmental financial support influenced English medical detectives like Spilsbury to become lone experts. In contrast, the Scottish administration was more receptive to innovations in forensic medicine. Consequently, Scottish medical detectives understood the breadth of their field better, and were more accepting of collaborative work. Smith was one such medical detective. He was a transitional figure who broke away from the lone expert model to work with other scientific experts to solve crimes. Chapter Two showed that the manner in which Smith participated in crime investigations and his attitude towards teaching others influenced scientists to adopt a team approach. This was particularly seen in the way he inspired younger English medical detectives.

While most existing secondary literature focuses on one British tradition only, like Duvall's thesis, or broadly canvasses the two major British traditions, such as Watson's *Forensic Medicine*, Chapter One explored the development of medical jurisprudence in the English and Scottish traditions in detail. This dissertation's discussions also examined specific factors which affected the kinds of medical detectives that developed in England and Scotland, and traced their effects. This set out the environment Smith and other medical detectives worked in and were influenced by. While some historians refer to the fact that Smith changed the way medical detectives worked,¹ this dissertation investigated this claim in greater length and depth. Since the majority of the literature on Smith is based on his autobiography, he was somewhat overlooked or taken for granted by most historians because very few seriously challenged accounts of him. This dissertation drew from his other writings and those of his contemporaries to form a more

¹ Odell, *Medical Detectives*, p. 109.

nuanced image of him. As well as newspapers and journal articles, Chapter Two referred to textbooks and obituaries, which have not been studied closely in other secondary literature before. They illustrated how Smith consistently advocated a team approach among medical detectives and influenced the way British scientists worked in crime investigations. This study prompts closer examination of the differences between the English and the Scottish systems and their effects on other people involved in crime investigations such as the police. While a closer look at Smith beyond *Mostly Murder* reveals the potential for him to be examined in even greater depth as a historical figure, this dissertation has added to the history of British forensic medicine and science by analysing the implications of the differences between the English and Scottish traditions on medical detectives and demonstrating in depth how one person affected the way scientists work in crime investigations today.

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