Mr John Welch – Written evidence (FRS0034)

Introduction.

John Welch has a B.Sc. in chemistry and is a professional member of the Chartered Society of Forensic Sciences. He has worked as a forensic scientist since joining the Metropolitan Police Forensic Science Laboratory in 1972. He remained with that laboratory and its successors until his department was closed in 2010. Since then he has worked as a private consultant in his specialist area of work which is forensic document examination.

The questions asked by this House of Lords Select Committee in its request for evidence and the outline scope of the inquiry ignore a vital aspect of forensic science. Namely, it is inevitable that the major user of forensic science in any country is the police service within the criminal justice system of that country. That is not because forensic science is biased in favour of the police it is because every investigation must have a starting point and that is inevitably a police responsibility. The gathering of evidence in each investigation requires that forensic science be readily available to the police. Block funding of public service forensic science, free at point of use, achieved that. Payment by police to commercial forensic science on a case-by-case basis brought about catastrophic decline.

1. Is forensic science contributing of the delivery of justice in the UK?

1a. Yes but nowhere near as much as it used to. The commercial approach increases costs to customers and the major customer, the constabularies, would prefer to spend their reduced budgets on themselves rather than with an external supplier. The reduced use of forensic science by the police means that there is less need for defending solicitors to consult forensic scientists to check and / or challenge the forensic science used by the prosecution. Potentially, this has an adverse affect on the quality of the forensic work first undertaken. A great incentive to working to the highest standard is the knowledge that an equally qualified scientist may review and challenge that work on behalf of the defendant.

1b. A very recent incident is a good example of how funding affects investigation with forensic science. It is reported that “menacing” cards have been placed on the desks of MPs by someone who must have a security pass to the Houses of Parliament. They contain enough handwriting for the writer to be identified by comparison with the writings of all who hold such passes. Depending on the number of those people the comparisons could take hundreds of hours and cost thousands of pounds. Are the police willing to pay for that work?

2. What are the current strengths and weaknesses of forensic science in support of justice?

2a. The full investigation of any incident is likely to be assisted by scientific examination of the physical remains of that incident. Not just in the detailed analysis of a suspicious substance or in revealing a DNA profile but in the wider sense of making logical deductions from demonstrable observations about those
physical remains. Determining a sequence of events by blood pattern analysis and deciding whether or not a suicide note was written by the deceased are just two examples amongst myriad others. The fact that forensic science still exists in England is a strength. The fact that its scale of operation is so much less than it was twenty years ago is an overwhelming weakness.

3. **What is the scientific evidence base for the use of forensic techniques in the investigation and prosecution of crimes? Are there any gaps in that evidence base?**

3a. Much publicity has accrued to pronouncements in America by various committees, commissions, and individuals that many forensic sciences lack a scientific foundation. Some of the techniques criticised are not used in the UK. More generally, the critics seem to use “lack a scientific foundation” to mean “lack statistical data”. That is an extremely narrow view of science. Forensic science is an application of scientific method to the physical remains of an incident. Very often the nature of the incident is such that no statistical data are available and it may be that there is no prospect of relevant data ever being available. English courts allow expert evidence to be given by witnesses whose personal experience in the relevant area has provided them with greater knowledge than is expected of the general population. Expert conclusions delivered on that basis, sometimes called “subjective probability”, are every bit as valid as those conclusions dependant on a numerical database. Indeed, the appeal court judgement known as "R v T" expresses doubt about some statistical methods whilst stating that expert conclusions based on training, knowledge and experience may be preferable. Statistics are concerned with populations; forensic examinations are concerned with individuals and individual events. No scientist will ever state that a field of enquiry is complete and there is nothing more to be discovered in that field. To do so would be a denial of scientific method. Nonetheless, the mainstream, traditional areas of forensic science employed within England are well supported by scientific foundations.

3b. That also applies to fingerprint comparison despite its chequered history over recent years. For most of my career fingerprint experts have denied being forensic scientists! Also, only a small, albeit increasing, number of fingerprint experts have tertiary scientific qualification. “Forensic scientists deal with probability: fingerprint experts deal with certainty” is a phrase I have heard while waiting outside court. It revealed an attitude correctly dealt fatal blows by the Brandon Mayfield-Madrid train bombing case and the McKie case in Scotland. Further, the research undertaken and reported by Williams and Evett showed the “sixteen point rule” to be without the slightest foundation. Despite all that the existence in most developed countries of large fingerprint collections whose contents are searched for target fingerprints and found to be distinguishable from the target shows that fingerprints undoubtedly identify individuals. For historical reasons fingerprint departments remain separate from traditional forensic science and are directly under police administration.

4. **How can the criminal justice system be equipped with robust, accurate and transparent forensic science? What channels of communication are needed between scientists, lawyers and the judiciary?**
4a. Establish a number of broadly based forensic science laboratories protected from commercial pressures and available to police free at the point of use. Improve funding to the Legal Aid Agency so that defendants can properly review and challenge forensic science used by the prosecution. The LAA hourly rate was reduced arbitrarily by about 20% and the LAA does not comprehend how long it takes to do a case. Our adversarial court system is not perfect but with adequate resources available to both sides it generally gets to the truth. If good forensic science is available only to the prosecution then the system will give every appearance of bias.

4b. The work undertaken within any forensic science laboratory is confidential up until it is presented in the public forum of a court. Well written reports will communicate accurately to lawyers, the courts, judges, and other scientists. Part of the remit of public service forensic science laboratories would be to contribute freely to the training of lawyers, judges, and detectives.

7. Is the current market for forensic services in England and Wales sustainable?

7a. The current market for forensic services in England and Wales is an elaborate charade. There cannot be an economic market when there are three main suppliers and five or so groups of customers. The tender and bid process provides a mere pretence at competition; blocks of work may move from one supplier to another but other blocks of work will move in the other direction. The process requires constabularies and suppliers to have procurement teams, sales teams, account management teams, customer relations management teams, which are a huge overhead cost and produce no forensic science whatsoever.

7b. Private businesses operate under commercial pressure for profit. Profit increases as more work is done per unit time; speed of working becomes more important than quality of work; the temptation to cut corners becomes irresistible.

7c. The example of Key Forensic in the recent past being propped-up with money from the National Police Chiefs Council shows that a main supplier cannot be allowed to go out of business. “Work-in-hand” must be completed at the cost of someone. And, if all staff from a failed business were transferred to another supplier to maintain overall case-work capacity then the reduction in the number of suppliers would make the pretence of competition even more obvious.

8 and 9. Accreditation and the role of the Forensic Science Regulator.

8a. The currently fashionable system of accreditation is ISO17025. It is widely misunderstood. There is no such thing as a laboratory or a scientist accredited to ISO17025. It is processes which are accredited to that standard. The forensic sciences span many disciplines; each discipline will involve a number of processes. With the cost of accreditation approximating £15,000 per process the overall cost is significant for the large companies and totally unaffordable for small companies. The Forensic Science Regulator’s policy to make ISO17025 compulsory is a perfect example of a policy with unintended consequences. Compulsion will drive out of business the small companies which are the main sources of forensic science for defendants in criminal cases. Compulsion will
make it much more difficult for defendants to have prosecution forensic evidence checked and challenged.

8b. As well as the financial cost of ISO17025 there is a huge cost in staff time to create and maintain the volume of paperwork necessary to document the processes subject to that method of accreditation. Also, ISO17025 confers far less benefit than its advocates imply; in recent years the quality problems that have occurred in forensic science laboratories have all occurred in ones with processes accredited to that standard. ISO17025 is actually more concerned with consistency of the process than quality of the process; it was originally developed for laboratories concerned with calibration, an activity where consistency is all important.

8b. An alternative quality system operated by the Council for the Registration of Forensic Practitioners was concerned with how individual scientists applied the processes to real cases. Its assessment of quality of work was thus more direct than is the case with ISO17025. The CRFP operated successfully for nine years despite being funded on a shoestring. If a body analogous to the CRFP were established with charges four-fold what they were the cost would still be an order of magnitude less than the cost of ISO17025. I suspect that such a body would meet with general approval from all who haven’t already jumped through the hoops of ISO17025.

10. What lessons can be learned from Scotland, Northern Ireland, and overseas?

10a. That they have better systems than England and Wales for reasons already described. They operate in much the manner that was used by the whole UK and which England and Wales were forced to abandon. Conversations with professional colleagues in the United States, Canada, Australia, France, the Netherlands, and Germany bring forth expressions of sad amusement at the plight of forensic science in England and Wales. They consider it self-evident that criminal justice is a matter for government not for a commercial marketplace.

12, 13 and 14. Research.

(i). Forensic science research does not sit well in a commercial situation. It is a cost until completed and even if successfully providing new knowledge and techniques it may be that they are not used often enough to generate significant income. Topics to be researched in any particular forensic science can be identified by practitioners in that field who know where gaps in knowledge exist and by lawyers and police who might wish that particular knowledge could be obtained. Communication between those groups used to be routine. In my own field topics which immediately come to mind are:

   (i). Determining time elapsed since writing in ink was made on paper. A difficult task but one that is being worked upon in the USA with some success.

   (ii). Physical and chemical analysis of modern inkjet inks and laser-printer toners. Those substances are likely to have changed significantly in the past decade

   (iii). Sequencing of laser-printing and handwriting where the two do not intersect. This seems to have become routine in the Czech Republic where the technique was developed in the Criminalistic Institute in Prague.
(ii). Some manufacturers of equipment for the forensic sciences have undertaken significant research and development in pursuit of new products to sell to laboratories. In contributions to my field and several others the company Foster and Freeman Ltd have been outstanding. Two way communication between manufacturers and forensic laboratories helps that process but if the laboratories are themselves commercial businesses then concerns about “intellectual property” are an extreme hindrance.

(iii). More fundamental and longer term research could be undertaken in collaboration with university departments but the universities would expect to be funded and from where would that funding come?

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