

Keith Borer Consultants

Forensic expertise — *when you need it*

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The future of DNA profiling – how will it affect your cases?

You may be unaware that a major increase in the sensitivity of DNA profiling techniques used in the UK is being introduced. At a scientific level, this marks the latest improvement in profiling technology, but when it comes to assessing the evidential value of the results, much of the knowledge accumulated over many years' use of the old technology will become less certain.

On one level, the new methods will obtain detailed profiles from the type of samples that previously would have failed or produced results that could not be said to be significant. Samples that previously gave low level, uninterpretable results may now give interpretable results. The improvements are such that we are sure many old, cold, unsolved cases are likely to be revisited. Old stored samples and exhibits will be recovered and analysed to see whether valuable results can now be obtained.

There is, however, a down-side to this development: these methods have an increased tendency to produce mixed profiles from many types of samples, because they will detect not only the DNA in a stain or skin debris, but also any underlying DNA present from other sources. All the DNA and cellular debris that transfers during normal daily life between people's clothing and skin, particularly in domestic circumstances, will now have a much greater tendency to be detected in the profile results. This means that the very significant issue of attribution uncertainty is increased. That is, if you obtain a mixed profile from a faint saliva or blood stain, or from a tiny blood spot or loose surface debris recovered on adhesive tape, how do you know which of the people represented in the mixed profile provided the blood or saliva or skin debris? Uncertainty in the attribution of individual profiles to specific types of body fluid can have a very significant effect on a wide range of criminal cases.

To complicate matters, the current forensic service providers are each opting for one or more of the new analytical systems, so there will no longer be one universal system for the UK.



@KBCalison

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Also being introduced are a number of highly sophisticated statistical methods for drawing out significance from complex DNA profiles which previously would have been given little or no evidential value. In other words, from the sort of multi-person, mixed DNA profiles that a frequency figure could not be attached to. These software packages will provide a much more powerful tool when it comes to trying to identify whether the DNA of a particular person, defendant or victim, is represented within a complex mixed profile, however, they will not assist with the question of correct attribution or in determining the significance of the results vis-à-vis an alleged action over a defence alternative.

Both the new methods of producing DNA profiles and the new statistical methods have arrived at about the same time, compounding the advantages and disadvantages. They are being implemented **now** throughout the UK, and are being used in investigations. This has implications on forensic experts such as us to be ahead of these developments and their consequences in case work, and to understand which techniques are being employed by which of the prosecution forensic laboratories, when they are being implemented and how well they have been validated.

It is also important that there is raised awareness amongst those responsible for advising defendants and preparing cases for court, that their previous knowledge may no longer apply and some of the old convenient assumptions may no longer be correct. Ideally this should exist from the interview stage, to ensure that the forensic results are not misrepresented in questioning, right through, if necessary, to testimony at court. Otherwise we risk an increase in the number of occasions in which courts process criminal cases without accurately understanding the evidential value of the forensic results that form part of the prosecution.

If you need advice on these changes, please call Dr Helen Davey, Dr Duncan Woods or Mr Lee Fagan.

Latest articles at

www.keithborer.co.uk/news

At KBC we use the news section of our website to provide customers with updates on forensic science, the implications of Court of Appeal rulings on scientific issues and some case studies that may be relevant to your case work. In the last few months, we have posted articles on:

- The future of Black Boxes in cars
- Sexual Offences – 'consent or not' and the case for forensic examinations
- Facebook Defences

Our website is a great way to keep up to date with forensic developments. We also post details of all our forthcoming forensic CPD seminars for solicitors and barristers.



Still waiting for Disclosure?

How forensic work specifically for the defence can help.

With the introduction of Streamlined Forensic Reporting by the prosecution, evidential forensic statements may be disclosed to you only very near to the trial date. **There is an alternative**, however, which is for the defence team to devise its own forensic strategy to test the merits of their client's account relative to the allegations. This has the added advantage of putting you in control of the timescale as you can commission such work well in advance of the trial.

Such an approach was taken earlier this year by Nikolich & Carter Solicitors in a case where their client was charged with burglary and ABH. The prosecution's primary evidence was identification of their client by the complainant. By comparison, the defendant's account was that at the time of the incident, he was not there but travelling from his home to visit his brother who lived in a nearby flat to the incident location. The solicitors commissioned a report on the cellsite evidence to test their client's account. Thomas Marryat's analysis vindicated completely the defendant's account and the case was subsequently dismissed.

With less and less forensic work being commissioned by the prosecution, devising a forensic strategy for the defence may be the best option for your clients. Any member of the scientific staff at Keith Borer Consultants would be happy to advise on options for forensic work that might be useful in your case.

Dr Mark Robinson BSc, PhD

Senior Forensic Firearms Consultant

KBC is delighted that Dr Mark Robinson has joined us as a firearms expert. Mark has over twenty-five years' experience in forensic firearms work and has a wealth of technical and casework experience. During his career with the Forensic Science Service, he rose to be their Firearms Professional Lead.

If you need a guiding hand through the interconnected layers of firearms legislation, or have other firearms related questions, please give Mark a call on 0191 332 4999.

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