



Science and Technology Select Committee

Corrected oral evidence: Forensic Science

Tuesday 27 November 2018

3.30 pm

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Members present: Lord Patel (The Chairman); Lord Borwick; Lord Fox; Lord Griffiths of Fforestfach; Lord Hunt of Chesterton; Lord Kakkar; Lord Mair; Baroness Manningham-Buller; Lord Maxton; Baroness Neville-Jones; Lord Oxburgh; Lord Renfrew of Kaimsthorn; Lord Thomas of Cwmgiedd; Baroness Young of Old Scone.

Evidence Session No. 11

Heard in Public

Questions 110 - 122

Witnesses

Dr Anya Hunt, CEO, Chartered Society of Forensic Sciences; Angus Marshall, Director and Principal Scientist, n-gate Ltd; Dr David Schudel, Forensic Scientist, Keith Borer Consultants.

USE OF THE TRANSCRIPT

This is a corrected transcript of evidence taken in public and webcast on www.parliamentlive.tv.

Examination of witnesses

Dr Anya Hunt, Angus Marshall and Dr David Schudel.

Q110 **The Chairman:** Thank you for coming today to assist us with our inquiry. We appreciate that. Two things before we start. First, will you introduce yourselves and state any allegiance you may have to any organisations? If you want to make a short statement, please feel free to do so. Secondly, unfortunately there is a debate going on where there are likely to be votes. If the bell goes, some or all of us may depart, temporarily leaving you on your own, or some of us might stay behind. I am sorry about that, if it happens, but it is unavoidable.

Dr Anya Hunt: I am the CEO of the Chartered Society of Forensic Sciences. I have a background as a reporting forensic scientist in forensic chemistry, including fire investigation and footwear examination.

Angus Marshall: I am a lecturer in cybersecurity at the University of York, a visiting fellow of the Open University and I am also an independent practitioner in digital forensics and act as an expert witness roughly two or three times a month. I have recently completed research into the application of regulations and international standards within the digital forensics field.

Dr David Schudel: I am with Keith Borer Consultants. The company has been around since 1980. We have 46 members of staff, 32 of whom are forensic scientists or forensic engineers. In the last 12 months we have provided over 2,300 reports, most of which were for the criminal justice system. Most were at the request of the defence, although we did some at the request of the prosecution.

Q111 **The Chairman:** Thank you. My question relates to the understanding of forensic science within the criminal justice system in the judiciary, among the lawyers and the juries. I would like your comment on that. You might also like to comment on how it can be improved and what channels of communication exist or could be developed to facilitate that, and on the criminal justice system being equipped with a robust, accurate and transparent forensic science.

Dr Anya Hunt: There is definitely a disparity across the criminal justice sector when we look at the understanding and use of forensic evidence. There is a variety in the strength and size of the evidence base in the various disciplines, and those disciplines continue to grow. The judgments have demonstrated that there has been a lack of understanding of the process in some scientific reasoning, so there needs to be more of an appreciation of quality standards. There is often limited understanding of the value and the strength that those quality standards give to us.

I am aware that the Royal Society and the Royal Society of Edinburgh have led a project, initiated by the previous Lord Chief Justice, looking at the development of judicial primers. To date, I understand that there are two of those in the areas of DNA and gait analysis. Within the organisation of the society there has been some feeling, on the gait

standards in particular, that perhaps not all the relevant experts were involved. This is a key piece of work, however, and these primers have a part to play in educating lawyers and the judiciary as well as the juries.

As for the accuracy, robustness and transparency of forensic science, I am a keen believer that the implementation of quality standards is key to that and that all those delivering services through the criminal justice system should be accredited against the appropriate standards as laid out by the Forensic Science Regulator.

Dr David Schudel: The channels of communication are there. They work slowly. In some cases, there seems to be deliberate obstruction and we often have to go to the judge to get permission to get information that we are normally entitled to which, adds time to the process. There is room for improvement there.

Another area is acting on reasonable deadlines. When the prosecution has six months to compile a phone case and we are given a week, it is very hard to make that deadline match the amount of work that it is going to take to review that phone case.

I notice that the Attorney-General did a review of disclosure, which was very welcome and hopefully will address some of the issues.

There has been talk about joint meetings of experts. That has been going on for several years now, and generally speaking we find that when there is an issue between forensic scientists a joint meeting is promoted. I know the forensic scientists at least very much welcome it and it happens often. That has been a vast improvement in recent years when it comes to forensics and the criminal justice system.

On robust, reliable and transparent forensic science, when I look at forensic science and the way that forensic science differs from normal science; in forensic science you first have to choose the exhibits that you need to have analysed. They then have to be analysed, and you have to interpret the results in the context of the case. Each of these steps invariably involves different people. But if it is all done by competent people, you have a competent result that ultimately goes into the system. We see problems in areas where there is any weakness in each of those steps. You then end up with a weaker report, a weaker strength of evidence, and in the worst case, of course, it can be misleading.

On transparency, I will mention the SFR1s, the streamlined forensic reports. They are supposed to speed up the judicial system when it comes to forensic science, but they are not transparent. Even having the word "forensic" in the title of an SFR1 can be seen as non-transparent, because it might be written by an administrator and not by a forensic scientist. We see that there might be critical information that the defence needs to know which might not even be mentioned in the SFR1. Although they are not supposed to form part of the key evidence coming to a trial, we routinely see the SFR1s in trial but not the SFR2, which is meant to replace it if the case goes to trial.

Lord Fox: I was interested to hear that there are only one-and-a-half primers in existence. I got the impression from a previous witness that

these primers were up and running and active. I might have misunderstood that evidence. How long does it take to deliver one of these primers? Who is accountable for them? They are clearly not sufficient in their own right.

Dr Anya Hunt: The rate at which they have been delivered by the Royal Society and the Royal Society of Edinburgh has been incredibly slow. One of the difficulties, particularly with regard to Mr Marshall and digital forensics, is that things change so quickly that by the time they are produced they will be out of date. My understanding is that there are still only these two primers and that it has taken a number of years to get to this stage. Potentially, by engaging more effectively with forensic science practitioners and the Royal Society, there is an opportunity to get that work carried out more quickly and provide primers to support those practitioners.

Lord Fox: So to be clear, there is no library of primers to deliver this.

Dr Anya Hunt: Not to date, as I understand it.

Lord Hunt of Chesterton: What do you mean by "primer"?

Dr Anya Hunt: The primer is a piece of written work that outlines the core aims of the method and maybe identifies some of its shortfalls and the risks. It is there to guide the court as a whole through the process to give it a better understanding.

Lord Hunt of Chesterton: So there are primers for every sub-discipline.

Dr Anya Hunt: That is the aim in the longer term.

Lord Hunt of Chesterton: So at the moment there are not many, but there may be more in the future.

Dr Anya Hunt: Absolutely.

Q112 **Lord Kakkar:** I would like to come back to the point about these agreed forensic reports. The point, if I heard it correctly, is that there is a choice as to which material will be analysed; not all the material will be subjected to forensic analysis. How is that choice made and by whom? Is it made by the prosecution? Is the defence aware of all the material that might be forensically relevant that is not being subjected to that full process and analysis? Is there anything else that will not be known to both parties where the assumption of the court is that everything that should be known is known and has been shared?

Dr David Schudel: The decision tree as you go down an investigation is that you cannot collect everything. There is always a decision, starting with the scene of crime officer and the officer in charge of the case. There should be meetings about what evidence should be collected at any given stage, and a lot of police forces use a forensic adviser to determine which items may go for external examination or not.

Anything that has been captured as an exhibit at that stage should at least be either listed as an unused exhibit or have a report that has been generated as a result of being analysed. That is always listed. One thing I do is go through the unused material to see what exhibits are out there.

Even the defence team may have already highlighted certain things that they consider relevant which they do not think have been analysed. We therefore look at getting those analysed. Occasionally you will find that they have been analysed but that a statement has not been produced.

With regard to the disclosure, generally in the trial bundle you will get the entirety of what has been done along with the unused material. You need to be careful to go through the unused material to make sure that there is nothing of relevance. If you think that things are missing, it is a matter of requesting it. You may want to see the scientist's notes or something that the fingerprint department has done, and you can request that through the normal channels. I would not necessarily expect to see every little detail in a case—every email, every handwritten note or notes that are generated by the scientific personnel who are doing the work—but they are available on request.

Baroness Neville-Jones: I would like to follow up on one point that Dr Schudel made right at the beginning. You mentioned obstruction. Can you give us a feel for what you mean by that?

Dr David Schudel: I will take cell-site analysis as an example, but it also applies to other areas. The police will get raw data from the network and will use that to create a report. We will get a copy of the report and we will ask for the raw data which they have used to create the report. What we will get is something else that we cannot use, and we go through this process several times.

Sometimes we are told that we are not allowed to have that. It does not happen all the time, but in the worst cases we will have to appeal to the judge and say that we need this information, and our instructing solicitor will make that request through their channels. Normally it will be granted and we will get the information that we need.

Baroness Neville-Jones: What would be the basis of the refusal?

Dr David Schudel: Some of the people involved take great pains not to release evidence that they believe is sensitive, so they may upset people's rights in the process. The GDPR has also had a knock-on effect. Part of it is just people being very careful and showing over-diligence when there is a basic need for us to have the data for legitimate purposes. It is about bridging that gap.

With the right channels in place it can be quite straightforward. Sometimes it is as simple as, "Can we have permission to talk directly to the individual who is controlling it?", and they need permission to provide us with information. If we bridge it that way, often the whole thing unravels and we get the information very quickly.

Baroness Neville-Jones: There is, of course, the data regulator, if necessary.

Dr David Schudel: We work through the legal channels, so we put our request through the solicitor and then it goes to counsel and, if necessary, through the courts at that point. Sometimes counsels can work it out between them, as long as there are assurances that we are

doing it for the right reason. But it can sometimes take weeks in a system that is already pushed for time.

Q113 Lord Hunt of Chesterton: My question is about the Chartered Society of Forensic Sciences, which I am interested in having been president of another society myself. How does your society support the broad spectrum of the forensic science community? We keep hearing about forensic science in terms of analysing an event, but presumably some of the science of that is to do with prevention of crime, and I wondered if that was included in the definition of forensic science and whether your society is also helping that aspect of the prevention of crime.

Dr Anya Hunt: To address the first question, this is about the broad-spectrum issue. It is clear that the forensic sciences are a very diverse mixture of sciences, which presents both an opportunity and a risk. Many of these disciplines have only a handful of scientists, so as we look towards ensuring standards it is incredibly difficult when many of these disciplines do not naturally fall in the same category of acceptance as others.

The society has been able to engage with some of these disciplines better than others, depending on the keenness of individuals to take that forward. We continue to do an awful lot of work in increasing knowledge and understanding in the use of quality standards, and, of course, this is truly cross-disciplinary.

Lord Hunt of Chesterton: When you say “cross-disciplinary”, it is still all forensic, is it not, or do you mean that it is completely different—chemistry, biology?

Dr Anya Hunt: Good science is at the heart of excellent forensic science. For the science to be correct and to be validated and verified, it has to be good science. It is the way it is applied and the extra rigour that is required to make it acceptable within the CJS that makes it a forensic science. At the heart of all forensic science, irrespective of the discipline, there should be good, high-quality defensible science.

With regard to crime prevention, if we look at the value of forensic science—

The Chairman: I am sorry to have to stop you mid-sentence, but noble Lords who need to go to vote, please do so.

The Committee suspended for a Division in the House.

The Chairman: We resume. I stopped you mid-sentence. Please continue.

Dr Anya Hunt: From memory, I was looking at the use of forensic science as a crime-prevention tool. Just a few weeks ago, the society ran an event that looked at the value of forensic science and noted that this is extremely difficult to quantify, because there is clearly a deterrent value in forensic science; the general public have some understanding of the discipline and see it as a deterrent.

There is of course the use of huge amounts of technology. One that I could name is SmartWater, which you see on the back of security vans: Money and goods in these vehicles are covered in the SmartWater, and if the offender gets it on them it is largely indelible and can be detected by forensic means. This has come about as the result of a change and a development of a forensic technique. There are also GPS devices, et cetera. There is huge potential in educating young offenders in particular on the difficulties of entering a crime scene and not leaving crime traces behind, thus increasing crime prevention. The society has been engaged with this in the past but not so much now.

We also have to think of CCTV, which was introduced into my home city of Wolverhampton in the 1980s as a deterrent but now has huge value in policing from the point of view of intelligence and evidential purposes.

The society could certainly do more than it does.

Angus Marshall: The chartered society has something of a problem in the way it is perceived by some other disciplines. I am thinking particularly of the computing community. Digital forensics is seen very much as a niche, but in terms of things like crime prevention there are broader lessons that we could be learning from those who investigate crime, not just within policing but in other fields, and applying those lessons to make digital technology more amenable to examination and the preservation and recovery of evidence. At the moment, the whole concept of forensic readiness is massively underrepresented in the computing community, which means that new technologies are being produced every day that are inherently difficult to recover anything useful from to use as evidence.

Q114 **Baroness Young of Old Scone:** This is a question for Dr Hunt. Do you see your organisation as a kind of cheerleader for forensic science? If so, probably summarising slightly, the impression we have been getting is of a set of services that are pretty well in crisis. I am interested to know whether your society has been campaigning on this.

Dr Anya Hunt: We are the professional body representing forensic sciences. We gained a royal charter in 2012 and, as I said, it is difficult because of the very broad array of disciplines to engage effectively with everyone. We have 3,000 members and we represent them in their role within the criminal justice sector. Obviously, some of those are outside the UK. We are supporting the role that quality standards have across the criminal justice system.

One of the other questions, if you wish me to answer it now, is about championing forensic science quality standards and how they affect each and every person, whether as part of a larger organisation, a police force, fire service or a small or micro business.

I totally agree that forensic science is in crisis. There has been a huge amount of austerity and funding cuts affect every part of the discipline. The society aims, as a not-for-profit charitable organisation, to try to support every individual that is a member and others that are not in the challenges that they face. So "cheerleader" perhaps underplays it. I am

quite happy to speak about some of the work that we are doing now if you wish, or we can come back to that.

Baroness Young of Old Scone: I was interested in whether you see it as your role to stand up and say that this thing is broken and the bigger system needs to be fixed.

Dr Anya Hunt: It is my role as it is others' but, yes, the system is broken and, yes, it does need to be fixed. If we look at other professional bodies, law for example, the professional body has a much greater role to play in that. As forensic sciences mature, the Chartered Society of Forensic Sciences should be in a similar position to that of law and medicine.

- Q115 **Lord Thomas of Cwmgiedd:** I wanted to ask you about the accreditation or standards of individual practitioners. What does the society do to ensure that its members are initially accredited and competent, and what is the ongoing review, because professional bodies have to address this now?

Dr Anya Hunt: Picking up from where we started, our professional body is little different from those of law and medicine, for example, in that there are no requirements that forensic practitioners are members of our society. We have different levels of membership, and there are different requirements depending on that. Within the last two months, the society has introduced a chartered forensic practitioner programme. The aim of that is to measure excellence in expert witness skills but also their overall competency within their chosen specialist field.

There is a move at the moment, as you will be aware, towards the requirement that all organisations that are doing work for the criminal justice system are accredited, and part of that accreditation looks at the individual competencies of individuals within the organisation. Currently, the society does not have a role specifically on that, but we are looking to support the forensic science regulator in some of our work programmes.

Lord Thomas of Cwmgiedd: So being a member does not give you a qualification that is reviewed?

Dr Anya Hunt: Not currently, but, in the longer term, if we looked at other professions, there should be accreditation in place for organisations and the professional body should have a role relating to the qualifications of individuals.

- Q116 **Lord Oxburgh:** Looking forward, there are quite big expectations for the Transforming Forensics programme. How do each of you view this from your individual perspectives? Do you think this is likely to produce many of the changes that need to be forthcoming?

Dr David Schudel: The Transforming Forensics programme does not affect the work we do directly. It seems to be a programme that the police are following and, in the initial steps, looking at the fingerprint and digital forensics.

My concern with that programme is that there has already been a large shift of funding away from the external providers, which to all intents and purposes are the traditional forensic labs, to internal forensic provision within the police, thus strengthening things such as fingerprints and the digital forensics.

So my concern with promoting that programme is that we are going to see a continued shift of funding away from one service to the other, when in reality we have an expanding amount of forensic evidence. This whole digital arena has come about in recent years in addition to the work that we need to continue. It is not as if it is one pot that needs to be shifted from one area to the other. The actual cost base for the whole thing needs to expand to accommodate all the areas.

Lord Oxburgh: Who has the responsibility for project managing this operation?

Dr David Schudel: It has to have some kind of oversight that is necessarily independent of the police that also looks at the criminal justice system as a whole and their needs regarding the evidence. In having it directed by the police, the worry is that there would be a temptation to try to keep as much of it in-house as possible. I understand that, but someone needs to say, "We need a certain amount, and this is how much we need to continue with the traditional forensic work that is critical to the system".

Lord Oxburgh: What do the other witnesses think about this?

Angus Marshall: I find it difficult to give a response. I have tried to engage with the programme and found it largely uncommunicative, to be honest. I would echo Dr Schudel's concerns that it is predominantly policing-led, particularly in the digital world. We need to bear in mind that the techniques that we use are used by other agencies beyond the police. Trading Standards, for example, have a lot of digital evidence usage and they are a very neglected part of the community. They have virtually no support at all. We also have strong presences in the Financial Conduct Authority, the Serious Fraud Office and even the NHS. There is a lack co-ordination at that level.

Dr Anya Hunt: My understanding was that the programme specifically had three work areas, and I agree with my two colleagues that it is largely police-focused. The three areas are fingerprint bureau modernisation, looking at digital forensics, and the implementation of ISO standards. In my opinion, it is too little too late, and probably the programme is five years too late to make an active input.

When we look at the huge challenges in all three of these areas, I am not convinced that the resources are effectively divided within the TF programme to deliver on those in a timely manner as would be required.

Q117 **Baroness Neville-Jones:** We touched earlier on the whole question of the access of the defence to forensically-based, science-based evidence. A number of witnesses have suggested to us that there is not exactly a level playing field between prosecution and defence when it comes to

access to that kind of work—for instance, there are low rates of pay for legal aid and for access to forensic work for the defence. I would be interested to know from your experience whether you agree with this general proposition, what you think the causes are, and what you would like to see done about it.

Dr David Schudel: The services that are available are available to both.

Lord Hunt of Chesterton: Can you give us an example?

Dr David Schudel: DNA, handwriting analysis, cell-site analysis, drugs, toxicology. There are services out there that could give the same service to the prosecution as they would to the defence in my experience. I do not think there is any real restriction on getting things done other than finding the right price for that service.

On the legal aid provision, which is a lot of our source funding, there are two things to talk about. One is that the current system for legal aid is based on the lowest quote. That is regardless of quality and whether it is even fit for purpose. If two estimates are submitted, they go with the lowest one.

More fundamentally, for a lot of the work we do, such as DNA, fingerprints and the digital arena, the legal aid rate now is less than it was in 1999. So we are really struggling.

Baroness Neville-Jones: Do you mean in monetary terms?

Dr David Schudel: Yes, the hourly rate that we are allowed to bill legal aid at is less than in 1999.

Baroness Neville-Jones: In real terms it is much, much lower?

Dr David Schudel: Yes. There has been no index-linked inflation to the running costs and the awards that legal aid give. We struggle with that. We are running very lean. Some of our areas are losing money but other areas are doing a little better. It is very difficult, particularly when you are trying to hire people, because we cannot offer the salaries that people are coming to expect in areas, particularly in things like digital, where they can walk into a non-forensic market. People do not go into forensic science for the salaries. We all do forensics because we love forensics. But there is a point where, if they can get double the salary working for a large digital company that does private work that is not forensic-related, people have to look at the numbers and that is the way they are going to go.

Baroness Neville-Jones: What is the effect of all this?

Dr David Schudel: Ultimately we are struggling to keep going as a business, and when you add the level of accreditation that is coming to be expected of us it will be a massive financial hurdle to overcome to try to keep going with a business model like this where the funding is so tightly reined in.

Baroness Neville-Jones: Is the problem affecting the administration of justice in your view?

Dr David Schudel: Yes, it is. We are still going, but we have already seen several companies on the brink of bankruptcy or which have gone out of business. Particularly from our perspective, we are part of the checks and balances of the system. If you look at quality as a whole, because there is a lot of talk about quality, I would argue that, for the criminal justice system, one of the quality markers is that we do not send an innocent person to prison. Part of that quality system is the checks and balances that experts like us put into that system. If, in the current market, more and more people go out of business, on one hand although you are perceiving a quality increase by further accreditation and making it statutory, on the other hand you might be losing those very people who provide the checks and balances in the system and you decrease quality at the other end. It is a balance.

Lord Griffiths of Fforestfach: Quite apart from the people who go out of business, if you look at the quality of your product, if people are paying increasingly a lower real price for that product, as you have said, presumably the quality of that product, even if it is in business, has been going down.

Dr David Schudel: We are an ISO 9001 company and we also have two ISO 17025 accreditations. We have a very high-quality model.

Lord Griffiths of Fforestfach: What if you look across the sector as opposed to just yourselves as an outstanding example?

Dr David Schudel: When we look at the work by the prosecution, it is getting leaner and faster and, as a result, has less detail and we find more problems within it. As a service we have been in this since 1980. There are always the cases that come along where you find an issue, and that will keep on going.

With regard to quality, the work that is done for a quality standard is maintained at a quality standard. The work that was done 20 years ago by the prosecution labs, for example, is still at the same kind of level; there is just less of it. The work that we are producing is at the same quality level; it is just that we are having to do it to shorter and shorter deadlines. The system is creaking at this point.

Lord Griffiths of Fforestfach: If you are doing it to shorter and shorter deadlines, does that not have an effect on quality?

Dr Anya Hunt: Absolutely. If the three givens are quality, turnaround time and cost, it is impossible to get low-cost, high-quality, fast turnaround of samples. The current rates that are paid by the LAA for forensic science are too low to enable quality standards to be adopted. We need to be mindful that many of the companies that are carrying out LAA-funded work are small and micro businesses and sole traders, so the total cost of quality to them is a higher proportion of the turnover than it is for the larger companies. If we expect, as we should, that companies large and small have the same high-quality expectations, there must be equity in the quality, so the LAA rates need be updated to reflect that to ensure that the quality continues.

Angus Marshall: May I add a point about the checks and balances? One of my frustrations, as someone who has recently predominantly done prosecution work, is that I very rarely see a defence expert. Historically, I used to spend a lot of time sitting outside the court with colleagues from the profession agreeing technical points. That saved a lot of time in court. I cannot remember the last time that I saw a defence report. I cannot remember the last time I had that sort of conversation. I am spending far more time in the witness box taking up the court's time on technical material that counsel is not confident with, that the jury is getting bored with and that, frankly, is often adding to confusion because of the way it is being presented.

Baroness Neville-Jones: Is that because the defence cannot afford you? Why is it?

Angus Marshall: For some reason, defence experts are not being instructed, are not being used effectively.

Dr David Schudel: Part of our problem is that we are turning work away because we are maxed out trying to keep going in this current market.

Baroness Neville-Jones: I see. That was the point I wanted to raise with you. If, by definition, you say that you will keep up your standards, but you are doing less work and the number of cases coming to court has increased over time—it is not going down—is it right to conclude that there are an increasing number of cases where forensic evidence that could be provided is not being provided?

Dr David Schudel: Mathematically, that would make sense. Personally, I have no way of knowing. We do turn work away, but I do not know where it goes.

The Chairman: Is it likely?

Baroness Neville-Jones: It does seem very difficult to understand.

Angus Marshall: It certainly seems likely to me that it is not getting the independent scrutiny from the defence that it deserves.

Q118 **Lord Fox:** We have just started to get into the area of the role of the market. There are two forces at play here. One was the creation of the market and the other has been the reduction in the budget available to spend on forensics. If we can decouple slightly the budget from the market, how do you see the role of the market? Has the market itself been responsible for driving your prices down? In order to win the work, you have done it to yourselves by bidding lower and lower in order to secure the work, or is there some other force at play?

Finally, how does this pan out for the future? You have already alluded to fragile companies but also investment in future research and in future techniques.

Dr David Schudel: It comes back to where I started, with legal aid rates being 1999 prices. We cannot double the number of hours by magic because we need to make the ends meet. The work takes the number of hours that it takes to do.

Lord Fox: Does the legal aid rate determine what the prosecution pays as well?

Dr David Schudel: No.

Lord Fox: So most of the work that you have said you are doing is for the prosecution.

Dr David Schudel: No, I am doing it mostly for the defence.

Lord Fox: But the prosecution rates have also fallen substantially. There is no doubt that the rates have gone down, and in the case of the defence it has been pushed down by legal aid. In the case of the prosecution, is it the market that has created that? What is the dynamic here?

Dr Anya Hunt: Competitive tendering.

Lord Fox: Perhaps you can help me with this.

Lord Griffiths of Fforestfach: On the one hand, you have a market that has freedom to determine the price, and on the other hand you have the police, who are subject to budgets. If those budgets are cut, that will have a comparable effect in the market to less legal aid. So in a way there has to be some—

Lord Fox: I am trying to work out which is pulling and which is pushing.

Angus Marshall: There is a perception that technology is advancing, and as technology advances, automation and speed increase, so prices should fall. To some extent, for what we would class as volume examination—drug testing, DNA processing and basic scientific processes—that may be true, but when it comes to specialist services where automation is not possible, it still takes the same amount of time, probably even longer in the digital field because of the increase in storage capacity.

However, the available budget has been shrunk, and I know that when my services are required behind the scenes, there is a long debate about who is going to pay for my services—whether it is coming from a police budget or a CPS budget—and that introduces extra delays. I am now routinely under pressure to find a way to cut the price.

Lord Fox: I am trying to get to whether, if there were a more benign financial settlement, the market would work. In other words, is the market being ruined by the finances or is the market inherently dysfunctional anyway?

Dr Anya Hunt: The level of dysfunctionality has massively increased as a direct consequence of austerity.

Lord Fox: I do not doubt that.

Dr Anya Hunt: Therefore, if we go back to the three factors of quality, turnaround time and money, if you want it done more quickly, that will cost organisations more, even with automation. Are those turnaround times realistic? Are they being utilised by the police for crime-prevention purposes? If they are not, maybe there is an opportunity to take the foot off the gas and not have things produced quite so quickly.

Lord Fox: So all you need is money and everything will be all right? Is

that what you are saying?

Dr Anya Hunt: No, that is not the case, but I certainly think that it would help, given that we want to make sure that the United Kingdom remains at the forefront of forensic science now and well into the future, and cutting corners financially can only damage that.

Lord Griffiths of Fforestfach: You have said that dysfunctionality has increased with budget cuts and you suggested that there is an intrinsic dysfunctionality in a market system. Could you expand on that dysfunctionality?

Dr Anya Hunt: If we look at quality standards, currently the Forensic Science Regulator does not have statutory powers, so the level of compliance among organisations, police forces, small and medium-sized businesses and the large providers is not the same. Probably the biggest effect is that people do not have the money. There is an expectation within police forces that quality is an addition to the standard day job. There have been cuts in police at all levels.

Lord Fox: But we have established that is it not just the money. You said that even if you get all the money it is still a problem. What would still be a problem even if you had all the money?

Dr Anya Hunt: I did not say that there would still be a problem. There would then be a requirement that money is used to manage the quality effectively across all sectors and to ensure that the quality is there. That would enable more resources by way of people and bums on seats and also not cut corners on availability of expertise, et cetera.

Angus Marshall: The problem is that the money is going down while the casework is going up. The capacity simply is not there for the price that people are willing to pay. It is not a real market.

Lord Griffiths of Fforestfach: If there was a regulator with statutory backing, could that problem be solved?

Dr Anya Hunt: The only way to get equity of quality across all provision for prosecution and defence is to enable the Forensic Science Regulator to have statutory powers as soon as is workable.

Lord Fox: Mr Marshall, you seem less than convinced by that.

Angus Marshall: I am afraid I completely disagree. Having done some work looking at how the regulator standards have been implemented, while they are good in theory, the actual implementation is fundamentally flawed. The regulatory regime that we have at the moment is putting a veneer of respectability on some disciplines that they cannot provide evidence for.

Lord Fox: Such as?

Angus Marshall: I am going to pick on my own profession, because that is the one that I have looked at most closely. We have a situation in the digital world where bodies are being accredited to provide digital forensic services, but they are not providing evidence that those services are correct. They cannot produce that. It is a fundamental flaw. It is a

solvable flaw, but, right now, if we had statutory powers for the regulator and the regulations were in force, we would be putting criminal justice at risk.

Lord Griffiths of Fforestfach: Can I clarify that in one respect? If we took the case of motor mechanics repairing cars, you are saying that here are people in this area of digital science who, if they were in the equivalent position of people repairing cars, would be incompetent.

Angus Marshall: I am not saying that anyone is incompetent and I am not saying that anyone is doing anything wrong. I am saying that they cannot provide the evidence that they are right, which is what the regulations require. The implementation of the regulations has moved away from that. There is bad wording in some of the guidance documents that have come out of the regulator's office that has allowed that to happen.

Dr Anya Hunt: I disagree. If those in forensic science provision, both at the crime scene and at the laboratory, look to align themselves to ISO 17020 for the crime scene and 17025 for the laboratory, and implement those in line with internationally recognised documents, such as ILAC G19, and fully implement them in the line with the Forensic Science Regulator's codes of practice and conduct, this is a recognised model that is used in other industries for laboratories and for inspection. Is it wrong that, for example, to set yourself up as an asbestos tester you must be accredited to 17020, but to set yourself up as a forensic scientist who goes and takes samples from scene there is no such requirement?

Angus Marshall: That is exactly my point.

The Chairman: I do not want to get into "I disagree with you and you disagree with me". I think we get the gist that you do not agree with each other.

Baroness Neville-Jones: On Mr Marshall's disagreement, is it that you think that the forensic regulator is not relevant here, or that, if it were to have statutory powers, it would operate those powers in a wrong way?

Angus Marshall: I have long been a cheerleader for the regulator. I wholeheartedly agree with the principle of accreditation. My problem is that the way things are working at the moment in forensic science, the accreditation is based on the customer's expression of what they want. If we look at other disciplines that use the same standard, they are rooted in fundamental science. They show that the method is correct first and then choose that method. It is the way the regulations have been interpreted.

Dr David Schudel: Coming from our perspective, a lot of the work that we do is review work from an expert perspective. We review work that has been done and in the context of the entire case and we form an opinion. It is very difficult to accredit an opinion. You can have two people working at the same accredited lab using the same methods, and they can have a difference of opinion because it is based on individual education, training and experience as well as what information they have seen.

On the point about statutory powers, if it comes down to not being able to give an opinion in court because you are not accredited, a lot of small providers would have to say that they cannot do this anymore.

Going back to the quality system, you are then losing some of the checks and balances in the provision from experts who have been doing this for many years, including me—people who have spent many years putting a positive input into the criminal justice system—yet the blanket of ISO 17020 and 17025 has been chosen to put on to that profession.

- Q119 **Baroness Young of Old Scone:** Correct me if I am wrong, but the impression I get about ISO 17020 and ISO 17025 is that they are very much process-accreditation standards. They are standards that are about processes rather than about people. Is that right?

Dr David Schudel: Yes.

Dr Anya Hunt: The other documents that I mentioned, such as ILAC G19 and the Forensic Science Regulator's codes of practice and conduct, look at processes and the competency of the individuals who are working within their processes, and the training and the monitoring of that competency is key to the attainment of that accreditation. It is not simply process.

Baroness Young of Old Scone: So following up Dr Schudel's comment about expert witnesses giving an opinion, if they are accredited, that would give them a good housekeeping seal of approval in order to be an expert.

Dr David Schudel: It could be used for that reason, but in reality you can demonstrate competence and expertise in many other ways, including individual certifications, for example. Yet that has not been considered in the process. You have to do 17020 or 17025.

At the end of the day, as I said before, you cannot accredit an opinion. We have seen it before where you have two people working at the same lab having a difference of opinion as to what the evidence might mean. We are trying to reconstruct the past as experts. Hopefully, one of us was not watching the crime when it happened, and you try to reconstruct what happened. You can have two differences of opinion, and I think that is of benefit. I would think that the CJS would want to know that there is a difference in opinion between two experts, because they may have another shelf-load of information that neither of the experts has seen that might help them decide which one of those two opinions may be the right answer. Of course, both of them could be wrong, which is also entirely possible.

Baroness Young of Old Scone: So your analogy with someone who is accredited to be able to talk about asbestos is not really valid, because people identify asbestos or do not identify asbestos, and there is not going to be a difference of opinion that matters as crucially as matters in the judicial scenario.

Dr David Schudel: Yes, exactly. There are the three steps that I talked about earlier, which are what you choose to be analysed, the analysis,

and then the interpretation. Most of our issues are not about the analysis. Usually the results are okay. The issues that we usually end up having to deal with are things like what could have been done but was not done, and the interpretation of that result. Once you have sight of pretty much the whole case, you try to put that into context, which is where the opinion comes in.

Baroness Young of Old Scone: If all three of you were given a blank piece of paper and charged with putting a quality standard system around forensics, would you start from the ISOs or somewhere completely different?

Dr Anya Hunt: To pick up my colleague's point, there is value in looking at procedural and process accreditation plus individual competency and certification. If we look at other disciplines and aspects of life, that is exactly what is done. The individual must be able to demonstrate that they are competent but they are working within frameworks that are regulated and accredited.

To pick up on the point about opinions, there are ways of calibrating people's opinions by assessing the results and the opinions that they gather from simulations, for example, when we have ground-truth data and we know what the answers are. Forensic science is unique in that we do not necessarily know what has happened and, therefore, we do only have opinions. But we can calibrate, validate and verify the methods that are used to produce results which we then use to form our opinions. That is key. We need to mitigate the risk associated with that information gathering, which we then use to form those opinions.

Q120 **Lord Renfrew of Kaimsthorn:** I would like to ask you about what you think the gaps are in research in the field of forensic science and in the understanding of forensic science. What do you think the role of UK Research and Innovation could be in advancing that?

Angus Marshall: I recently returned to academia after running my own company for a fair while. I was an academic before that. I have been conscious all through my career that in academia forensic science is not looked on favourably by management. It does not have a unique unit of assessment for research excellence framework.

Lord Renfrew of Kaimsthorn: You mean management at university?

Angus Marshall: Yes. It is not a good career move. We need an acknowledgement in all the research councils, and hence UKRI, that forensic science is a societal issue and that we need greater direction. Rather than specifically targeting forensic science for funding programmes, the research council should be asking questions of people applying for funding along the lines of, "Does your research have potential within the criminal justice system and within forensic science?"

Lord Renfrew of Kaimsthorn: It is such a diverse field.

Angus Marshall: Absolutely, and we need to remember that DNA came about largely because a police officer happened to be at a conference at the right time and had a conversation in the bar. Things like this happen

all the time. Targeting specific thematic areas leads to short-term solutions, but getting people to think about the problem and the potential applications of their research could have a much larger longer-term benefit.

Baroness Neville-Jones: Is it not recognised in the REF?

Dr Anya Hunt: Absolutely. It does not have its own category and therefore it makes it difficult to get it recognised by the research council for funding. This is a core area that could massively increase the willingness in universities and university management to accept forensic science as a discipline.

Lord Renfrew of Kaimsthorn: Could the chartered society advance this issue of gaps and recognition?

Dr Anya Hunt: We have put submissions in, for example with regard to recognition to the research councils, and it is an area where we would look for government support to look at where the gaps are opening up. Simply getting it recognised it as a subject in its own right or as a set of disciplines would mean that UK universities would benefit greatly from a co-ordinated framework.

Lord Renfrew of Kaimsthorn: The problem is that it is such a diverse bundle of disciplines that it is difficult to see how UKRI, for instance, would focus properly on forensic science as an entity.

Dr Anya Hunt: It is an applied science, not a pure science, and it is disparate. That is its challenge and its opportunity.

Lord Hunt of Chesterton: There are other examples such as medical and environmental science.

The Chairman: Do you agree that the issue in promoting more research in forensic science must be the quality of the case made to support more research?

Dr Anya Hunt: And to enable universities to recognise that it is valuable in the REF, otherwise forensic science academics are on a hiding to nothing in their career development.

Angus Marshall: We have a problem in the current REF in that, although forensic science is going to be counted for the first time, significant numbers of staff who are active in forensic science will not be returned because of the nature of the contracts they are on. They are excluded from being returnable for the REF, so there will be a skewed view of the activity.

The Chairman: Is the REF system an issue?

Dr Anya Hunt: It is at least part of the issue and part of the solution.

The Chairman: We will explore that with UKRI.

Q121 **Lord Mair:** We have talked a lot about digital forensics already, but in your written evidence, Mr Marshall, you have talked about there being a proliferation of different data formats and you have said that it is impossible for investigators to keep pace.

Angus Marshall: Absolutely.

Lord Mair: Can you say a bit more about that? It sounds rather alarming. Does that mean that it is proceeding at such a rapid pace that it is difficult to do the job properly?

Angus Marshall: I do not know about making it impossible to do the job properly. It does mean that we are constantly having to develop new techniques. We are up against human ingenuity rather than evolution. All we have to do is look at something like the app stores and the number of new apps that are added every day. Each one will have its own functionality and its own particular data format, and there is the potential for each and every one of them to be involved in some criminal act, so that at some point we may have to devise a technique for dealing with them.

If we couple that with the privacy issues and the increase in security that has been put on to devices, that also presents challenges to us. With the increasing storage on devices, there is a limit to how quickly we can extract data from devices, so that adds time in every investigation. Then we have the proliferation of devices that are inherently insecure and not capturing sufficient data to allow investigation; in that realm I am thinking of the internet of things in particular.

We are up against a problem where human beings, for convenience, are willingly disclosing more and more data, some of which has evidential value, but it is not in an easily accessible format. We struggle to assess which is going to be the most valuable at the start of any investigation, and even if we can extract the data we may not be able to interpret it in a reasonable amount of time.

Lord Mair: To what extent is this difficulty that you are describing shared among your colleagues outside your organisation in the providers who are looking at this kind of thing? Is this kept very secret within each organisation?

Angus Marshall: No. Every organisation is aware of the problem and every organisation is clamouring for extra resources to deal with it. What we lack is a co-ordinated effort to deal with some of these issues. A lot of the problems are pushed back to tool providers, vendors, in the hope that they can deal with it.

Lord Mair: At conferences, for example, are these problems that you are discussing openly discussed?

Angus Marshall: They are often not published, but they are openly discussed in the community and with the community's management.

Lord Mair: Dr Schudel, you talked about the problem with digital forensics being a particularly pile-it-high-require-it-cheap approach and how that is leading to rather low-quality work. Can you say a bit more about that?

Dr David Schudel: There is a certain aspect of this where it is, "what is fit for purpose and what is not". We are at the sharp end of the system, where everything else has been filtered out. We see a disproportionate

number of issues, but most of the cases where digital work is done will go ahead smoothly and the minimal work that was done to capture some information was suitable for that case. It is just when it comes down to trial and we start seeing issues where there is a lot more going on than we thought; it takes time to unravel that.

Time and funding are the main barriers in getting the work done. There is a lot of work that comes too late in the day, sometimes at the start of a trial for example, and they want something reviewed because it has just been served. There is not enough time or capacity to deal with it. On the funding side, where we struggle to employ more people, we may have more capacity to deal with last-minute issues that come in.

Q122 Lord Mair: May I ask all three of you what the criminal justice system should do to try to meet these difficulties and challenges, specifically in digital forensics?

Dr David Schudel: I would say having a reasonable understanding of the time it takes when there is a late serving of evidence and it needs to be reviewed. The defence is very likely just to accept it and say, "That's fine", and, having said that, having a mechanism to say that it is going to take a reasonable time, such as four or five weeks.

The problem is that it is not as if people are sitting around waiting for a case to come through the door. Whatever comes in has to be somehow juggled into all the other cases that have very short deadlines that we are trying to do at the same time. I think that most of the providers are in the same situation at the moment.

Lord Mair: So you are overstretched in that sense.

Dr David Schudel: Yes.

Angus Marshall: The other thing that would help would be some sort of co-ordination and horizon-scanning exercise that fed into proper research and development activity. Again, that is something of a luxury that not many agencies have access to.

Lord Fox: Who would do that?

Angus Marshall: That is an excellent question. I look forward to seeing an answer in your report.

The Chairman: Who do you think should do it?

Angus Marshall: My view is that it needs to be a community effort. We need to have some sort of co-ordinating body in the community as a whole and get it to take a lead on it. This is something that we are not good at.

Lord Fox: Bearing in mind that you describe a community under stress and this would be a voluntary addition to the level of activity, is that a likely solution? It might be desirable, but is it feasible in the current circumstances?¹

¹ The witness, Angus Marshall, sent this extra information following the session: I understand the point being made, but there are bodies who could act to co-ordinate

Dr Anya Hunt: Without additional resources, the answer has been clear from the rest of the work that we have talked about. May I raise one more point with digital provision?

The Chairman: I need to conclude, so we need to be quick.

Dr Anya Hunt: A lot of the smaller organisations that are undertaking digital work also have issues with being able to know exactly how much work they are likely to get, so there is a huge amount of cost in training and maintaining the right level of staff for the workflow, which is highly fluctuating.

The Chairman: I am sorry that this has taken us longer than usual because of the interruption with the vote, but I would like to thank all three of you on behalf of the Committee for coming this afternoon. We are very grateful.

some of this effort and gather useful intelligence from other agencies about where priorities should lie. There is likely to be some “pain” involved in this in the early stages as it will, undoubtedly, create some additional administrative overhead, but in the medium to long term the benefits of this will soon outweigh the additional overheads. Indeed, some of the information required should already be available in organisations which have various quality accreditations. I am already involved in having similar conversations with a few agencies and am hoping to be able to expand this in the very near future.