



HOUSE OF LORDS

Science and Technology Select Committee

Corrected oral evidence: Forensic science: follow-up

Tuesday 11 November 2025

10.20 am

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Members present: Lord Mair (The Chair); Lord Berkeley; Lord Borwick; Lord Lucas; Baroness Neuberger; Baroness Neville-Jones; Baroness Northover; Lord Ranger of Northwood; Viscount Stansgate; Baroness Walmsley; Baroness Willis of Summertown; Baroness Young of Old Scone.

Also attending: Lord Burnett of Maldon.

Evidence Session No. 1

Heard in Public

Questions 1 - 17

Witnesses

[I](#): Professor Carole McCartney, Professor of Law and Criminal Justice, Westminster Commissioner; Professor Angela Gallop CBE, Forensic scientist and Westminster Commissioner; Professor Niamh Nic Daeid, Professor of Forensic Science and Director of the Leverhulme Research Centre for Forensic Science.

USE OF THE TRANSCRIPT

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

Examination of witnesses

Professor Carole McCartney, Professor Angela Gallop and Professor Niamh Nic Daeid.

Q1 **The Chair:** Good morning, everyone, and welcome to this meeting of the Select Committee on Science and Technology. We are very pleased to welcome two of our witnesses: Professor Angela Gallop, forensic scientist and a member of the Westminster Commission on Forensic Science, and Professor Carole McCartney, also a forensic scientist and also a member of the Westminster Commission on Forensic Science.

Professor Carole McCartney: I am not a forensic scientist. I am an academic lawyer who researches forensic science.

The Chair: I am so sorry. We misrepresented you as being a forensic scientist. Thank you for correcting us on that. We hope that we will also have Professor Niamh Nic Daeid coming in online; at the moment she is having a connection problem.

At 11 exactly, we will pause the broadcast for a two-minute silence, and then we will resume the broadcast.

So we start with Professor Gallop and Professor McCartney. You were both commissioners on the Westminster Commission on Forensic Science and involved in its report, which was published earlier this year. By way of introduction, perhaps you could set out for us the background as to why the commission was set up, and what some of its most important findings and recommendations were.

We would like to know your views on the current state of forensic science in the UK. Perhaps you could set out how the issues identified around forensic science have changed. Back in 2018, this committee did an inquiry. What you think has changed since that time?

We would also like you to talk about what you think is the likelihood of further miscarriages of justice if these various issues are not addressed. Professor Gallop, would you like to start?

Professor Angela Gallop: Thank you. Since 2005, there have been seven major reports into forensic science, including in particular the most recent one produced by your committee. It was talking of "multiple significant, deep-rooted and persistent issues". In forensic science, we very much identified with that.

We believe that forensic science is not working for anybody. It is not working for the police. It is not working for forensic scientists. It is not working for lawyers. Ultimately, it is not working for the general public when they read about miscarriages in the press.

Since 2017, the Home Office has intervened in at least six major market and quality failures. It has been terrible watching three of the four main suppliers of forensic science have awful problems. Some of them

disappear. It started with the Forensic Science Service in 2012. Key Forensics is still managing, but in a completely altered form, and, most recently, Cellmark has gone.

You produced an extremely good report in 2019—I said that at the time, and all forensic scientists thought that—but most of the recommendations have not been acted upon, much to our dismay. There were broken promises of a royal commission on criminal justice. That is why the APPG on Miscarriages of Justice decided to commission their own reports, and why we ended up looking at forensic science in the way that we did.

In the report that the APPG did on the CCRC, reference was often made to the potential contribution of forensic science to miscarriages of justice. Also, of course, there were miscarriages of justice coming through in the press during that time. There was Andy Malkinson, and, most recently, Peter Sullivan was finally exonerated on DNA evidence after 38 years in prison.

We believe that more miscarriages of justice are absolutely inevitable. We spent a lot of time looking at near misses. These are cases that were rescued on the brink of going through our court process by a forensic scientist employed by the defence. That is happening less and less frequently so, as you can just imagine, the number of these near misses will go down but the number of miscarriages will go up.

We looked at three areas, and they were different chapters in our report. We looked first at the delivery of forensic science services in the market and the problems with that. Then we looked at the criminal process: the way forensic science is used by the police and, particularly, by lawyers and the courts. Finally, we looked at the science and scientists on which forensic science relies. Those were the three main areas. Everything we wanted to say, and everything we discovered, seemed to come out of one or other of those three areas; sometimes, obviously, there were overlaps.

We talked about the worsening problems in each of the areas, and we made a series of recommendations in relation to them. We were very well aware of funding constraints and all of that sort of thing. We were very keen in the report to imagine a system that was not too radically different from what we have got now, so that people might think that it would be achievable. We were very keen to do that in our recommendations.

One of the key things we were really keen about was to ensure that forensic science is and remains independent: not for the prosecution, not for the defence, but in the middle. We wanted to make sure that the protection of science and scientists was firm and enduring. So we talked about a national forensic science institute, which I think is something that appeared in the House of Lords report in 2019. We absolutely think that that is pretty critical and, through that—Carole can talk more eloquently than I can about this—we talked about creating a series of academic centres of excellence. This has certainly worked in other areas. In fact, I think there is a new police structure that is rather similar.

We want to strengthen the sector because we believe—again, as I think you said in your earlier report—that the market provides a really good basis for forensic science; we can explain about that. We need to make sure that that is strengthened and safe, and attracts new entrants. It has been so damaged by these awful market failures that something needs to happen to make it more secure, enrich it a bit and ensure that we have enough experts.

The awful thing, particularly at the complicated end of forensic science, is that we are losing so much of our expertise. It is absolutely terrifying. Take someone like me who has specialised in, among several things, the investigation of really complex and often historical cases. Now you could count them on fewer fingers than the fingers on one hand. It is terrifying to watch that expertise just drifting away and nobody really noticing—nobody really caring about it, apparently.

We are in a position where we used to be world-leading but are certainly not now. In fact, the issue now is: are we going to survive? That is why we gave our report such a dramatic title—*Pulling out of the Graveyard Spiral*. When we had finished, that is what all the commissioners felt about it. We were trying to decide on a title, and we all agreed: that is actually what we are saying.

We have had unrelenting critical scrutiny in forensic science for years, going back to the late 1980s. We are constantly writing reports and submissions for inquiries of one sort or another. We have had continual upgrades to regulatory requirements. We are very pleased that we have a forensic regulator and all of that, but it is not the answer to everything, and certainly it does not address some of the core issues facing forensic science.

So there is unremitting change. We have had lots of deckchairs being moved about. We have had an enormous amount of that, and we have been concerned about the apparent complacency of the Home Office in all of this. When we spoke to them they did not seem to be aware, or maybe they were just not concerned, about what was going on; it seemed like they thought we were making a fuss about nothing.

I now look back on that period when the market was set up—when it was emerging through the 2000s—and think that was the best time for forensic science. The competition was not too severe at that time when the market was still fairly new, but that competition was causing different suppliers to be imaginative and more determined. It was always, “We are collaborative—absolutely—but we are also just seeing if we can’t do it slightly better”. That was incredibly healthy. It got the cost of services down, speeded them up dramatically, got rid of backlogs, and it meant that new innovation was brought into forensic science.

That solved a raft of difficult old cases: Damilola Taylor, Rachel Nickell, Stephen Lawrence, the coastal path murders. The list is long. These cases were all helped to be solved by private companies and not by the

Forensic Science Service. I always think there is a bit of a misunderstanding about that, but it is true.

Faster, cheaper, better—those were all things that we hoped would come to pass, and they had come to pass. During that decade, my colleagues and I were saying, “It is amazing but, if you really apply your mind to forensic science, there is almost nothing that you cannot do”. Our success rate was so impressive. I have always thought since then that it is nothing to do with the market. It is how it is governed and how it is funded. Those are the issues. I have probably talked enough.

The Chair: That is excellent. Thank you. I am sure that we will have many more questions. Before I come to Professor McCartney, I want to welcome Professor Nic Daeid, who has come online. I hope you can hear us, Professor Nic Daeid?

Professor Niamh Nic Daeid: Yes, I can hear you. Thank you very much.

Q2 The Chair: Good. Professor Nic Daeid is a forensic scientist and director of the Leverhulme Research Centre for Forensic Science. We will come to you shortly, Professor. I started this session by asking Professor McCartney and Professor Gallop to recap on where they think we are in the field of forensic science, specifically with both of them having been commissioners of the Westminster Commission. I will ask Professor McCartney to introduce herself and say something about those points, and then we will come to Professor Nic Daeid.

Professor Carole McCartney: Professor Gallop has covered quite comprehensively why we did the report and what we found doing the report. Importantly, as you had done such a comprehensive and good report in 2019, we tried to take that as a stepping-off point—to look at what has happened since 2019. Obviously, we then had to put a lot of that in the context of what had gone on previously.

What we were trying to achieve was looking at the whole system. It is not just about science in the laboratory. We have got the crime scene, the courtroom, the underlying science. We tried to cover the breadth of it. As Angela said, we found worsening conditions in all three of the areas that we chose to focus on: the delivery of forensic science, forensic evidence and courtrooms and how they are being used by the criminal justice system, and then the actual underpinning science and conditions for forensic scientists themselves.

What we found even since 2019—in that fairly short period—was massive market constriction. So we are now left in a position, as Angela said, where we have a monopoly; it is not a competitive market. That comes on top of the problems you have when there is only one customer: the police. We now also have only one supplier, and that means all the risks attendant with having a monopoly supplier in any organisation or sector.

We found a dramatic loss of capacity in forensic science and loss of capabilities. Both of those things are very alarming. It has led to growing in-house provision. So the police are taking on a lot more responsibilities and a lot more provision of their own kind of forensic science.

There has also been also a real narrowing of our capacity and capabilities. We found that, beyond fairly standard DNA testing and toxicology analysis—which the police have a statutory duty to do—things like complicated casework, trace analysis, fibres and all those other things have just fallen off the radar entirely. They are very peripheral now.

We have a real fragmentation around the country when it comes to what forensic services you can get, depending on the police force and who they have a contract with and what for. Regarding the Home Office, as Angela said, we found some perhaps alarming complacency there.

They did have a forensic reform programme, which had four ultimate goals. When we visited and they presented it to us, we saw that, essentially, they had achieved one of them and then the programme ended. So they got a statutory basis for the Forensic Science Regulator, but they did not manage to achieve their other goals.

One of the big things we saw is that a lot has been done to streamline forensic science—we even have streamlined forensic reporting—but the focus has always been on efficiencies. We have got to do it fast and quick, and be efficient. Everything has come down to money. That means that we have shed a lot of the safeguards and the checks and balances. The things that made you sit back and say, “Let’s think about this. Let’s do a proper forensic strategy. Let’s collaborate with the police and the scientists”—those things that are seen as inefficient because they are slow and expensive but they get quality results have all been shorn away. We are left now with a kind of skeleton provision of forensic science that is really focused on speed and efficiency and easy testing. That is the thing that we are most scared will lead to miscarriages of justice.

Q3 The Chair: Thank you very much. Professor Nic Daeid, I and three other members of this committee remember you from our 2018 inquiry. We are very pleased to have you as a witness to this session, which is essentially trying to follow up on that inquiry. Broadly speaking, can you set out how you think things have changed since 2018, the time of our last inquiry? Can you also comment on the likelihood of miscarriages of justice that the Westminster Commission certainly identified?

Professor Niamh Nic Daeid: First, thank you for the invitation to provide information to the committee. It is a great honour, again, to be in front of you. I come to this from a slightly different frame as, across my 30-plus years working in forensic science, I have been predominantly an academic. But I have also undertaken research funded by a whole raft of different research organisations and agencies, including the Home Office, charitable trusts, et cetera, and I also do casework, of course. So I know about this from the front end of the business as well as the back end, as one might say.

The questions are very interesting. We have to remember that, within the UK, we have the devolved nations. The way that Scotland and Northern Ireland do forensic science and resource forensic science provision is very different from how it is done in England and Wales. So, often, there is a frame put around UK forensic science that might not necessarily be completely correct. The House of Lords discussions back in 2018 and 2019 were also framed around England and Wales, but there is another model within the United Kingdom that we can relate to and against which we can frame things.

Since I have given evidence to yourselves and, indeed, to the Westminster Commission, what has changed? I can see only a change for the worst, I am afraid. There has been a continued erosion in England and Wales of the independence of science. The scientific services provided to the criminal justice system are very much dictated by monetary value, which has its own knock-on effects in how that scientific evidence is generated and presented. It causes a real challenge; with this being driven predominantly through a prosecutorial frame, it causes a real challenge for the defence and for the defence expertise to explore that scientific evidence in its fullest sense.

That said, what has changed in the outside world around us has been really significant. During this timeframe, me and some colleagues overseas, in Australia, the United States and Europe, produced a position piece called the Sydney Declaration, where we tried to reframe forensic science against a definition that was quite broad based rather than simply science in the service of law, as many people see it. We also tried to lay out a set of principles against which we could develop a coherence around forensic science provision driven by scientists for the justice system.

So there are other things going on outside the United Kingdom, indeed outside England and Wales, that are causing significant changes in the profession and in the way in which science and law interact, not least in the work we do at my centre. There is change happening around us. I doubt England and Wales are benefiting from it, at the moment, I am afraid. Does this lead to a greater possibility or opportunity for miscarriages of justice within England and Wales? I am afraid I think that the answer to that is yes, because we are not getting the scrutiny of the level of science that is required in order to have equality of arms across the system.

As both Carole and Angela said, there is a push to get the cheapest test done, but that may not be the right test to do. There is not really a dialogue between the scientists and law enforcement to decide what the right test might be for a particular framework of circumstances. The dialogue between the scientists and the legal profession is probably even more strained. So we are not, currently, in a particularly good place.

The Chair: Thank you very much for those opening remarks. We have a lot of questions for all three of you, to which we are looking forward to

hearing your responses.

- Q4 **Lord Borwick:** I think you have pretty comprehensively answered my question already but could you lay out how these changes that have happened in the last 10 years have affected the forensic science profession over the last decade? In particular, how is the market? You alluded to certain of the companies going bust and others giving up; why was that? Were they not paid enough? What is the effect of one organisation having 85% of the market?

Professor Angela Gallop: Could I say one thing first, which came out of listening to what Niamh said? There is a big misunderstanding about forensic science, and this is at the heart of a lot of what we are seeing. People, or police, seem to think that it is all about tests—just tests—and that you string together a few tests and Bob's your uncle: you have the result and the evidence. Actually, it is about so much more than that. It is about which tests you do on what items and when you do them. It is about the whole investigative strategy and how you build on that. It is about understanding the crime scene, which is where all our forensic evidence, or most of it, comes from. So there is a huge front end to it, then there are the tests, which are terribly important, but are just in the middle.

Then there is the whole back end, which is working out what on earth they mean in the circumstances of the particular case that you are investigating. That can be quite complex and may require you to do a little more research into the likelihood of this and the likelihood of that, or how common or rare something is, in order to get it right. You have to do all that and then present it in a manner that everybody understands without losing accuracy. There are a lot of different moving parts to a forensic investigation. It is not just about tests.

The Chair: What about Lord Borwick's question about the companies going bust?

Professor Angela Gallop: As I said, the market has undergone a huge change. In the 2000s, I thought it was working really well. That was the point at which it was big and developed enough. Since then, the police have been under increasing pressure with their budgets and forensic science stands out. Although it is only a tiny proportion of their budget—absolutely tiny these days—it stands out because it is a fairly large proportion of their external spend. It is easy to look at it and think, "We'll slice a bit off that and that'll give us a bit more for other police requirements". That meant that the police became much more concerned about what they commissioned, and they also started doing much more of it themselves, which of course gives you other problems.

We have a regulator, and he sets timescales for when accreditation should be achieved. But, if the police say to him, "I'm afraid we can't do that, and if you're not going to let us do the tests if we don't have this accreditation, then I'm afraid the system will fall apart and we won't be

able to do our job”, then the timetables get put back. So it impinges on the regulator.

The contracting process for forensic science organisations has been made absolutely horrendous by the bunching of massive contracts together, fairly short timescales and price competition going through the floor. Suppliers are so keen to get as much work as they can to fill their laboratories and keep their scientists busy that they have been quoting prices that often barely make a profit, if at all, and sometimes even cost them money. That was one of the problems that Cellmark had.

Scene attendance is not what it was. There is now a lot of regulation attached to it and scene-of-crime officers complain to us that, while they used to do six or seven scenes a day, now they can do only one or two, because they have all these bits and pieces to put in place before they can do anything meaningful.

Police investigations are, as Carole said, relying on quick and easy tests—and just tests—and do not really think much beyond that. They do not really work in complex investigations when sometimes, for example, you have to look for something to find something else. The coastal path murders and the Stephen Lawrence murder are perfect examples of that; we did not find the body-fluid evidence that gave us the big statistics and the strength of evidence by looking directly for blood. We missed it, as the previous scientists before us had missed it, but we found it eventually by looking for textile fibres, and that is what led us to the blood. Forensic science has to be much more imaginative than people imagine, or it does not give you what it has. Because it has a huge amount to offer.

The triaging of forensic submissions and the lack of expertise was another big problem that has affected everything. The police do most of the triaging, and the fact that they are not forensic scientists means that they sometimes do not realise what sorts of things could be done or what sorts of things you need to do. They also do not do it in the kind of way that scientists have learned to do it, by using the more scientific method of saying, “Let’s try to focus on what we need to be looking at. Let’s see what the prosecution and the defence are saying, these two competing propositions, what lies in the middle and what’s going to give the answer”, which is a brilliant way of focusing. From an independent point of view, it focuses the kind of work you do, the sorts of examinations and the sorts of tests. That does not happen. At the moment, triaging is done by saying, “Well, this is what the police think. What do we need to prove it? What should we look for?” It takes me right back to when I started in forensic science in 1974. That is the sort of thing that was going on then; I thought we had left it all behind.

Anyway, investment and interest seems to have been diverted to digital forensic. If it is digital, then it can have whatever it wants. Whether it is successful or not is another matter. But that has created a great problem for traditional forensic science, which will always be important. Regulation has been so costly for smaller firms. Even for the smallest firm, it would

be tens of thousands a year to get it and maintain it. For defence experts, who very often work on their own or in very small groups, that was just too expensive for them to afford. They would not make the money on the casework they did to make that make sense, so a lot of them have left the market. Those are the kinds of problems that have led to the situation we find ourselves in today.

The Chair: Professor McCartney, do you have anything to add?

Professor Carole McCartney: Yes. One thing we talk about a lot is obviously police expenditure. You cannot blame them for the fact that they have had to try and find savings, because they have had their budgets cut. One of the difficulties is that there is often a false economy with them thinking, "We do not want to send money outside to forensic scientists. What can we not do? What can we save money on? What could we just do ourselves then that would be cheaper?" You find a lot of this triaging, so things will not get done, or it is wait and see or "Can we solve this case some other way first, more cheaply, more in-house?" and so forth. But that has an effect on crime scene examination. We have spoken to crime scene examiners who say, "There is not a lot of point in me getting samples because I know they will not be tested. When I take them back to the force, the force is never going to pay to get all of this tested, so there is no point me collecting it".

That is going to have dramatic effects in years to come where we have not collected the evidence. You can see miscarriages of justice occurring, but also an inability to solve or remedy those miscarriages of justice because there will not be the trove of evidence in the warehouse sitting there that we can then get out and do the work that Angela and others and Niamh have done for years in solving cold cases and overturning miscarriages of justice. There is a real risk there with the police taking things in-house, but that is the effect that the drive on saving money is having.

Lord Borwick: If the police do it and do it properly with scientific training, it is not necessarily bad, is it? That is the way it used to be done in the very old days; it was done by policemen, was it not?

Professor Carole McCartney: And there is a very good reason they stopped doing it.

Lord Borwick: And that is the reason we stopped. Now you say it is coming back into being done by the police themselves. Is that necessarily bad or just in practice bad?

Professor Carole McCartney: Police are not scientists. There should be real independence and there has to be impartiality, and the science should be done by scientists. Everyone else around the world has recognised that you cannot turn police officers—nor should you—into forensic scientists. They are two different professions, and it is too risky in terms of impartiality and independence.

Professor Angela Gallop: It is so easy to deflect an investigation. What you find depends very much on what you look for. If you are coming from a particular organisation—I would not want to say “with a particular mindset”—and you think someone has done something and you want to just see whether they have or not, spending as little money as possible, then your selection of which items you look for and what tests you are going to do on them can skew the results you get and can skew what you make of the results. That is why it is so important, first of all, to do that scientifically—as a scientist would, by looking at competing propositions to get your path for examination and testing—but then to make sure you know what it means at the end of the day.

Q5 **Baroness Neuberger:** I absolutely take the point about independence, but there are civilian scientists within the police, are there not? How does that work? Are you essentially saying that, if you have civilian scientists within the police, they will not have the independence that an independent forensic service would have? That is quite important.

Professor Angela Gallop: I do not think so, because they are sitting within the organisation. The other thing is that they are not sitting within an organisation whose main responsibility and main job is to do science. That is really important because scientists do not operate in a vacuum. They need to interact with other scientists and, particularly in an investigation, you never know what you are going to come up against. A forensic trace can involve absolutely anything—any kind of physical trace—so you are bound to have to get in touch with all sorts of experts about strange things. Fish scales, bone china—it can be absolutely anything. It is a collaborative process, and it is very much a scientific investigation.

Baroness Neuberger: So even if you are not an official police person—you are a civilian scientist within the police—you are saying you will still be attracted and pulled in some way into what the rest of the police are doing.

Professor Angela Gallop: In some way, yes, absolutely, even if it is only because of the budget and trying to be careful about that. It is just the realities of life, really. The only way forward is to have it completely independent. I remember when I joined the Home Office in 1974, one of the things we were really pleased about was the fact that we worked for the Home Office and not the police. When we got to court, lawyers could not say, “Well, you would say that, wouldn’t you, because you work for the police?”, and we could say, “No, we don’t, actually; we are quite separate”. We used to feel rather sorry for the Metropolitan Police forensic scientists who had to face that sort of thing much more often than we did.

Q6 **Lord Lucas:** Professor McCartney, you said something about the scene-of-crime officers being burdened by additional regulation. Is that something you can give us some pointers for—if not now, afterwards in a letter—so that we can understand that? Secondly, on that subject, should these people be part of the forensic service, or part of the police service?

Should their training be part of your responsibility? How does that relationship work—in your ideal system, not now?

Professor Carole McCartney: I think Niamh can probably explain as well that, in Scotland, it is done differently. Their crime scene examiners are not working for the police.

One of the difficulties with our report was that we were trying to find a way of not just coming up with our ideal forensic model that was just so fantastical that everyone would just put it on the shelf and say, "They are dreaming. That's never going to happen". If you asked us what our dream would be, yes, crime scene examiners would not work for the police. They would not be civilian officers, because that is an important part of the forensic process. The fact that they work within police forces and for police forces and are paid by them is problematic in terms of their independence and their impartiality.

It is not any slur on anybody to say that you are not impartial or whatever. It is the nature of human beings. There is a lot of psychological research about cognitive bias, and it is unconscious. We are not talking about a police officer tapping you on the shoulder, saying, "Please can you change that test result?" We are talking about the culture and the environment in which you work. If that culture and environment is a policing, prosecutorial environment, that is not the way that scientists work. There are no superhuman scientists that are not influenced by their working conditions—every human is.

The Chair: Professor Nic Daeid, you have been very patient.

Professor Niamh Nic Daeid: Not at all. To go back to Lord Borwick's question, one of the things that will—and has been, indeed—impacted quite dramatically is the ability for the forensic science providers to undertake research. In normal circumstances, or at least back in the old days, a research component was part of the activities that forensic science providers would become engaged with. Research is the lifeblood of science. Science does not stay still and certainly should not stay still. As forensic scientists become more attuned to particular trends or experience more complicated—let us say—challenges that are placed in front of them because of their experience working within the justice framework, then research and development becomes an obvious thing.

The Chair: I am sorry to interrupt. We are going to have a two-minute pause for remembrance.

Sitting suspended.

The Chair: Professor Nic Daeid, please resume from where you were before we paused.

Professor Niamh Nic Daeid: Research suffers. Research in the hands of private organisations and companies becomes very much driven by their needs rather than driven by the needs of the science. That is one point I wanted to make.

Another element of the question was: are there other countries that have different approaches? Some countries around the world, notably Australia and but also in Europe, bring together forensic science provision with public health provision; that might streamline, for example, tests in toxicology. Also, other countries bring environmental investigation together with forensic science investigation, which allows you to bring together a different means whereby equipment, resources, personnel and, indeed, research can be co-shared and co-owned. So there are different models for doing this. All have their challenges, but there are different ways of having a more commercially driven activity, particularly, as I said, around forensic toxicology and, potentially, around DNA.

Carole mentioned what is going on here in Scotland. In 2013, the Scottish police forces—I believe there were eight of them—reconfigured into one police force called Police Scotland. That happened in 2013. It was not without pain. All those who remember those days will know that it was a painful process. None the less, it provided a framework by which a number of things could be moved forward.

Over the years, two of the main areas of work related to forensic science that were done by the police began to be done by the forensic scientists; that is, fingerprints and crime scene investigation. Both of those elements and aspects of work up in Scotland are done by forensic scientists under the auspices of the Scottish Police Authority Forensic Services. That has brought—again, over time and with shifts in culture, people and processes et cetera—a scientific focus to those disciplines.

We would definitely advocate that the scientific element of an investigation of any incident begins at the crime scene. It does not begin in the laboratory with a test. It begins at the crime scene with people asking themselves: what items should I recover from this space or from these individuals that will give maximum opportunity for science to help answer the alleged activity that is understood to have taken place?

That mindset change sounds trivial, and easy, but it is not. It requires quite a significant cultural shift—a shift in focus: where do we bring science into the process? What does science actually mean in respect of what it can deliver to the process? We are not technology-driven, because we might not need technology. We might just need the right way of thinking—of thinking like scientists.

That automatically brings an independence into the way crime scenes are investigated and how samples are chosen, recovered and then brought to the laboratory. It is not perfect, but the step change and difference in how individuals involved in the process now think is quite noteworthy.

Q7 **Baroness Neville-Jones:** All three of you have painted a picture of the gradual degradation of market provision—of something which started out reasonably but is no longer working. Indeed, it seems to me that you are talking about something where systemic failure is now a real part of the scene and is not being arrested.

The question I want to ask you is about the attitude of Government. I think it was Professor Gallop who said that the Home Office does not seem to care. There is also the Justice department these days, which was not previously part of the scene. What do you observe about that department's interest in this subject, given that it is presumably of interest to it whether we get justice in our courts?

Where in future do you think governmental responsibility ought to lie? Do we have the right department in Government, and do we have the right priorities coming from the Government, and to implement the legislation?

That is the first part of it. Against your judgments on that, where do you think we ought to start in trying to rectify it? Professor Nic Daeid said at one point that there are choices; there is more than one way that you can do this. Do all three of you believe that to be the case? If so, what are the choices, and will they have systemic consequences as you go down different paths, potentially?

Professor Carole McCartney: I will kick off. The Home Office are not particularly transparent. That can obviously lead to a belief in their complacency, as they do not tell you what they are doing. We know now that there are lots of plans for massive policing reform, and forensic science is a little part of that.

The difficulty is that the Home Office is leading it, because it leads the police. Then we have the problem that forensic science should not be steered by just the police. Forensic science is now getting caught up with the question: what can we do about this disastrous situation? The answer is that we will have to wait until we have reformed the police. But we are a bit concerned that we do not have that long to wait.

Baroness Neville-Jones: Have they consulted at all? It is probably a silly question, but have they attempted to consult?

Professor Carole McCartney: They have told plans to people, but we are waiting for a White Paper; Yvette Cooper was supposed to be bringing out a White Paper on police reform. I think the details are still being hashed out.

There is a new director of the Forensic Science Service, although she does not have any forensic science services to direct. She has been employed for two years; presumably you will speak to her about her plans. She is supposed to be writing a blueprint for what is going to happen with forensic science as part of this Home Office reshaping of policing in general.

So there is a problem with the Home Office but, to be perfectly honest, the Ministry of Justice is even worse. We kept approaching them for a meeting and they were literally telling us, "There is nobody here to talk to". There had been one member of staff involved in forensic science, but he had left a year previously and nobody replaced him. So when we were saying, "We are doing this commission. Can we talk to somebody?" they

were saying, "No, there is nobody to talk to, because you need to talk to the Legal Aid Agency, the CPS or the Criminal Bar Association. They are not us." We eventually had a meeting with some young ladies who were in a miscarriages of justice unit, but then they had only been there a couple of months and all they were working on was the Post Office. So they were saying, "Well, forensic science is not part of the Post Office and we do not know anything about it". We literally got nowhere with the Ministry of Justice. This is the big problem here with your report, but also our report. Whose desk is it landing on and whose responsibility is it? It is nobody's. We do not have a Minister that has forensic science in their remit, so there is nowhere for the buck to stop.

I am not an expert in politics. You guys are. But if there is no Minister, then that is not feeding down to other departments saying, "We ought to do something about this because our Minister needs us to do something about it." If we were making recommendations, the buck has to stop somewhere and where that sits between the Home Office, the Ministry of Justice or even DSIT, because we are talking about science funding and research, then it has got to fall somewhere. At the moment, it just falls through the gaps between them and we are not getting traction. Forensic science is just caught up with the Home Office but we do not think it should be piloting this alone.

Professor Angela Gallop: I was just interested to hear what Niamh was saying about different models, because, of course, that is absolutely right. We are used to having either a national service or a market, and there are collaborations that could make that look slightly different. When we went to see the Scottish laboratory, we were really impressed with some things and particularly the fact that they had managed. It must have been really difficult to get fingerprints and scenes of crime into the same basket as forensics, because they are absolutely at the beginning of the forensic process. You have to understand the crime scene, and you have to collect the right stuff in order to get anything out of the forensic science laboratory. So that is really important that.

That was fascinating. Like the Forensic Science Service we had here, there are advantages of plurality in forensic science, as I talked about earlier. I wonder, as time goes by, whether some of the problems that affected the Forensic Science Service might also just creep into the Scottish model. Having said that, it obviously has some really talented managers there and some good scientists, too. I am not basing it on anything. I am just speculating on what happened to the Forensic Science Service with my long association with it.

Then there is another interesting thought. We also went to see the Netherlands Forensic Institute because it has a good reputation for forensic science—a bit like the Forensic Science Service used to have in the old days. I just wonder whether in the UK we are just, as we often are, ahead of the curve and therefore facing all the challenges and not being able to learn quite as much from other people who have been through exactly the same thing as we have. The Netherlands institute is

now getting extremely worried about private providers who are coming in with new ideas, with different technology able to do things quicker and probably slightly more cost-effectively. That reminds me of nothing so much as what happened in the early days of the development of the market in the 1990s. I wonder if it would be interesting to watch it. It was keen to learn from our experiences.

Baroness Neville-Jones: Are these techniques that the private sector brings in? Are they better or different?

Professor Angela Gallop: Just different.

Baroness Neville-Jones: Do they represent where things will go, ought to go, or are they contrary?

Professor Angela Gallop: They are just ideas that are worth trying out. It is just a case of, "Well, can we do it this way? Let us have a look. Oh, that really works. Great. We'll do that." Or "Actually, that is not quite so good as the old way, so let's not."

Baroness Neville-Jones: So that is not happening here.

Professor Angela Gallop: Not really. Now 86% of the market is with one particular provider. Even though you can have different laboratories in the same organisation, they all, of course, behave in much the same way. But if you have two different organisations, then they are thinking differently. I know that that was a huge deal in the early 2000s—the fact that you had that diversity and plurality of thought. It is interesting that, in the market, each different provider had a different professional personality. I had never really thought about that until it became perfectly obvious. Some of them were very good at some things and some were better at others.

Professor Carole McCartney: Again, I do not think that is to blame the forensic providers. As regards the forensic providers, some of the laboratories that they have invested in—state-of-the-art laboratories—are doing an amazing job, but they are businesses who are trying to work on margins that are impossible to work with. To survive as a business, you have to be able to make some kind of profit, and they are not because they are being starved and their customer will not pay for quality or doing research, and so on. They will only pay for the barest minimum. They used to balance things by saying, "If we do all these DNA tests, then we can use some of that money to put over here." But when that is starved of funds as well, the forensic providers are working on a shoestring and doing an incredible job, but it is unsustainable. That is what we are seeing, and that is why it is called a graveyard spiral, because we believe this is unsustainable.

Baroness Neville-Jones: A lot of this has to do with money. It is budget.

Professor Carole McCartney: It is a lack of investment. We are not investing properly in something that is quite important and hugely beneficial. If you actually evaluated the benefits of forensic science, you would probably find there are huge savings to be made with crime detection, preventing miscarriages of justice, all of these things. But it is just seen as a cost.

Baroness Neville-Jones: Is that the most urgent thing for Government, money?

Professor Angela Gallop: I think it might be possible to divert money from other kinds of activities that it has been going to—for example, some of the deckchair moving that we have had.

The Chair: We have a lot more questions. I am sorry to move us along. Lord Berkeley, I think Professor Gallop has already talked about the Netherlands. Do you want to ask your question?

Q8 **Lord Berkeley:** You have given us a fairly depressing view on transparency, the role of the police and funding. You have quoted a few examples from other countries, but is there anything more that can be done to learn from other countries and the way they do it, both in terms of independence and funding? It seems to me that that is the most important thing, which we do not have. We have mentioned Scotland and the Netherlands, but is there anywhere else that would help us persuade Ministers, if we can find one, that it is a good thing to do?

Professor Carole McCartney: One easy, quick thing to say is that we are almost the only country that does not have a national institute for forensic science. To go alongside that, there is no ministerial responsibility. There really is not a kind of focal home place for forensic science to be embedded and then to advocate for itself, to demonstrate its value, to argue for investment. One of the things is: who is arguing for this? We have had your report, reports before it and our report. But, actually, who is taking this and then driving it through? A national institute would be a galvanising thing. Then we could bring the brightest minds together. We could have a forensic science home and then push forward from there.

The Chair: We have questions about the national institute coming up, so perhaps we can move on. We have so many questions for the three of you and we are getting such interesting responses but we have to try to move a little bit more briefly if at all possible. Professor Nic Daeid, we are conscious that we lost connection with you. We are sorry about that.

Professor Niamh Nic Daeid: I was wondering: was it something that I had said?

The Chair: We are pleased that you are reconnected with us.

Q9 **Baroness Walmsley:** You have all mentioned, and last week Baroness Black mentioned, the major challenge with forensic science in the UK being the asymmetry between the ability of the prosecution and the

ability of the defence to access forensic science. Your report says that the long-term goal should be the removal of forensic science provision from police oversight altogether. First, can you set out what the challenges are for the quality of provision under the current model and the risks to independence?

Secondly, how could removing forensic science provision from police oversight actually work in practice? It occurs to me that there may be considerable resistance from the police, presumably because the budget would be removed as well—or perhaps they would be glad to get rid of it. I would certainly be interested to know what the court's attitude to that would be. Perhaps Professor Nic Daeid could tell us how the Scots managed to achieve that transition from the police to independence.

Professor Carole McCartney: One of the big problems is the big shift there has been with regulation, with everybody having to be accredited now. This has been very burdensome on small companies and even sole traders, so it has had a real impact on the defence expertise side of things. Previously, a solicitor could get the police forensic reports and so forth and then say, "I'm going to take this and get my own defence experts"; now there are really no defence experts left to be found. That is for a series of reasons, not just the cost of accreditation.

The Legal Aid Agency is almost impossible to work with, from speaking to solicitors, because you have to get three quotes. Of course, you would have to find three experts and that is very difficult. Then it only ever goes with price, and we repeatedly hear that then it haggles on the price, so will knock down the lowest quotes. Very often, solicitors do not have the time and the money, and experts do not have the time or the money. Very often, they are doing this pro bono.

One of the difficulties is the problem of the chicken and the egg because, to demonstrate to the Legal Aid Agency that you need an expert, you have to demonstrate to it why you need that expert, but you cannot do that until you have had an expert tell you, "This needs some expertise". So solicitors are just avoiding this.

The problem with the courts is that we need to get these things moving along quickly now. Trying to find experts, trying to get three quotes and trying to get an expert who will work for the pitiful fees that they are paid—then you do not get paid for two years anyway—all means that the defence market has crashed and that it is really difficult to get expertise in England and Wales.

Professor Niamh Nic Daeid: The challenge here is around culture, as much as anything else. In Scotland, when we moved from a number of police forces to one single police force, there was a big cultural shift across the police organisations themselves, as they needed to amalgamate and coalesce their procedures, practices et cetera. That caused them a real moment for thought and pause. It caused them the requirement to develop leadership when it had perhaps been siloed before.

At the same time, we have a different judicial system in Scotland. Our Lord President and Lord Justice Clerk head up the judicial services, and we have our own prosecutorial service led by the Lord Advocate. Within forensic science provision, we have one forensic science laboratory, as you know, which is part of or works within an organisation called the Scottish Police Authority. That looks after Police Scotland and the forensic science laboratory, but there is what is called a “sterile corridor” between the two. That means that one is not driven by the other: the laboratory does not do work just for the prosecution; it does work for the criminal justice system and it looks at both sides of the argument, as I said earlier, with regards to the items recovered from scenes and the work done on them.

When you throw the academic community into this whole landscape, and the research community led by our own centre, it means that you need five people at the table in order to make a decision about something. That really changes the way in which a system works with agility and the way in which people automatically work together, because there is a real culture of collaboration in Scotland for the benefit of the people of Scotland. That means that difficult questions are sometimes asked and that there needs to be a considerable amount of discussion, collaboration and critical thinking across the whole of the criminal justice space. That involves the defence side of the house as well.

While they are not perfect, the lines of communication are much more collaborative up here in the frozen north than they are down in England and Wales, simply because that is what we have created. It has taken us some time and pain to get there, but it is a system that works. The collocation of the forensic science laboratory, some of Police Scotland and the prosecutorial system in one place—the crime campus at Gartcosh—also helps. As I said, there is a real spirit of collaborative endeavour here that brings together all the players to help move the criminal justice system forward for science to truly serve its purpose within that system.

Baroness Walmsley: In light of that, could you tell us whether the Scottish judiciary has been supportive of that transition in how it has affected it?

Professor Niamh Nic Daeid: I work quite closely with the judiciary, but I would never even attempt to speak on its behalf. In our workings with the judiciary, it has been very impressed with the provision of forensic science up in Scotland. That does not mean that it blindly accepts it; it will test it, of course, and it has an expectation that the prosecutorial and defence services will test it.

Our research centre brings the Scottish judiciary and the judiciaries from England and Wales and Northern Ireland together with scientists, whether they are at the (laboratory) bench or in leadership positions, and with prosecutors and defenders to discuss matters like this in strategic conversations. So there is a very warm collaborative mood in Scotland.

As I said, it is not perfect—no system would be—but we are all aiming at the same place, which is to have science serve justice as best it can.

Professor Angela Gallop: That was quite interesting, because what Niamh was talking about is some of the function that we envisage for the national forensic science institute in England and Wales.

Q10 **Viscount Stansgate:** This is not quite the frozen south, incidentally—not at the moment. I want to ask about another challenge that has been brought to our attention. Please confirm whether our understanding is correct. It is the extinction or depletion of forensic science specialisms in certain areas—for example, fibre analysis, blood pattern analysis and toxicology. Can you explain, if this is true, why it is happening? What could be done to ensure that some of these vital specialisms are retained? Would it be true to say, in the light of some of your earlier comments, that some of the very high-profile miscarriages of justice that you mentioned as successes for the Forensic Science Service might in future not be possible because of the loss of these specialisms?

Professor Angela Gallop: Yes, absolutely. The situation with what we are calling niche areas now—they never used to be niche—came about because of all the things that we have been talking about. It is a focus on tests, on one or two types of tests and on three kinds of evidence particularly—digital, fingerprints and DNA—almost to the exclusion, in most cases, of anything else. As the requirement for these other areas has dropped, it has become impossible for suppliers to maintain the laboratories, the number of scientists and so on that they used to have. To this extent, we are losing some of these areas of expertise altogether.

I remember how, in the 2000s, it was possible to build up new expertise into forensic science laboratories. In the laboratory for which I was responsible, for example, we brought in what we called forensic ecology. It was a new area, within which we had soils, insects, plants, vegetation, pollen and all kinds of things. It was a small unit, but it was very valuable when it was required.

We also got closer to forensic pathologists. We started making sure that they managed their work more professionally. We gave them a bit of support to do that: we built them a special, properly temperature-controlled archive for their samples and all the rest of it so that, instead of them keeping samples under their beds and in their garages, they were now stored properly. We did things like that. We set up a new laboratory within the Royal Armouries so that we could make use of the Royal Armouries specialists. It is still there; it is a really brilliant collaboration between forensic science and slightly different interests.

We were doing all those sorts of things, but all of that has been stripped away over the past couple of decades. We are now a shadow of our former selves. The major supplier, with 86% of the market, still has a laboratory where you can get textile fibres done. Ten or 15 years ago, we had about 40 fibre scientists; now we have a dedicated four or five, or

something like that. That gives you an idea of the scale at which we have lost some of these things.

I am sorry, but I cannot remember what the rest of your question was.

Viscount Stansgate: It is a question for all of you. What do you recommend should be done to reverse the decline in these vital specialisms? To what extent would you, in looking to the future, genuinely say that grave miscarriages of justice may await us in future for lack of these specialisms?

Professor Angela Gallop: We would never have solved the two cases that I mentioned; I am sure that there are others.

Viscount Stansgate: Which two are you thinking of?

Professor Angela Gallop: Stephen Lawrence and the coastal path murders. We would never have solved those without textile fibres. We had given up looking for body fluids and DNA. It was only because we were doing textile fibres, which are very microscopic, so you see things that you would not normally see and which we discovered.

Viscount Stansgate: Those are two pretty important cases.

Professor Angela Gallop: Absolutely—and there will be others.

Professor Carole McCartney: I like that we are using the word “specialisms” because, as Angela said, they are often referred to now as “niches”. That is almost a pernicious word to use because, of course, it makes them sound like something you do not need very often. They used to be just a part of forensic science, but huge swathes of forensic science are now called “niche” because they are very tiny and there is hardly any of it going on.

One big problem is the inexperience and overworking of police detectives. We do not have enough detectives and they do not have enough experience. They do not know about niche areas or specialisms—they know that you can do DNA testing or toxicology.

Of course, the big thing that we have now is digital. We are repeatedly hearing this mantra that 90% of cases have digital evidence. It is driving behaviour. When I talk to police officers, they say, “In every investigation, we are being expected to hand over phones and computers and do digital testing on them”, whereas you could probably use other techniques. We are so focused on digital that it is becoming a self-fulfilling prophecy—they are getting just digital forensics and then saying, “Now we solve everything using digital forensics”. There are a lot of risks attached to that because it is not particularly well regulated. They have huge problems in digital forensics.

Also, not everything can be solved by seizing somebody’s smartphone; you still need all these little techniques and technologies. I would put my life savings on the fact that, in future, we will undoubtedly have

miscarriages of justice that we will not be able to solve, either because we do not have the expertise or because we do not have the evidence because we did not seize it in the first place. We have already had a miscarriage of justice overturned, but we had to go to Germany for the experts.

The Chair: Professor Nic Daeid, we were just about to ask you to come in; we cut you off again, I am afraid. Do you have anything to add on specialisms?

Professor Niamh Nic Daeid: Poor Thomas—thank you so much for reconnecting us. He is doing a sterling job there behind the lines.

On niche areas, Angela mentioned fibres, but there is also paint, glass and some of the other areas of what would be described in old-fashioned language as “criminalistics”. We are certainly losing the expertise in England and Wales, but we are not losing it in Scotland. We are maintaining that expertise up here—as are, as far as I understand it, our colleagues in Northern Ireland, who have a system and model not dissimilar from that here in Scotland.

There is a real risk—again, I absolutely echo what my colleagues have said—that, as the world around us changes, so too do the paint, glass and fibres that we encounter in casework. If we do not maintain the expertise, skill, research, development and understanding of these materials, we will lose the ability to use that evidence type in a particular way. Fibre evidence, in particular, can be extremely powerful evidence.

There is another element that we have not yet touched on and might do so: it is about not just finding these traces but understanding what it means to find them in the place where we found them, whether that is DNA, a fibre or other materials. The research work that needs to be done in the persistence and transfer of these materials is only embryonic. Without that information, we cannot answer some of the questions that are put to us by the courts, such as, “Was that particular individual involved in the activity, as is being alleged?” Some of the areas and skill sets that forensic scientists bring to bear are simply being eroded.

I go back to an analogy. We have been talking about forensic science as if it is a single thing, and about forensic scientists as if they do just one thing, but they do not. If a tradesperson comes to your house and you think that, because they are a tradesperson, they are going to fix your plumbing, but you call a plasterer to do it, your plumbing is not going to get fixed. We need scientists who are experts in textile fibres and their analysis as much as we need chemists and biologists, but we are losing that ability—not elsewhere, but certainly in England and Wales at the moment.

Q11 Baroness Young of Old Scone: Professor Nic Daeid may not know the answer to this question but I will ask it anyway; if she does not, perhaps we could be directed to where the answer might be found. How comparative are the funding levels per head of population for forensics in

Scotland and Northern Ireland, as compared to England and Wales? Does it come down to the fact that, as usual—I should say this because I am a Scot—the Barnett formula has lucked out Scotland, so it has more money to spend on this, as well as the very valid organisational differences that you have pointed out?

Professor Niamh Nic Daeid: That is a really interesting question. You are correct that I do not have the answer. I am Irish and live in Scotland, so I have a double challenge in working that out. I think that some economics have been done on it, but I am not sure what they are.

Part of it is about preventive spend, which one of my colleagues mentioned a bit earlier—how much money we will save if forensic science contributes in a more holistic way to a given case. But it is about more than just saying, “Let’s answer a test”. Angela and I spoke to this point earlier. Forensic science is not about that. It is about the process of starting thinking science at the crime scene; then thinking about the case circumstances; then looking at what test or set of tests is the most appropriate; and then looking at how we articulate that in the context of the framework of a case in the courtroom. We need to look at the whole process.

The question of how much money we will save by getting this process right so that we do not have miscarriages of justice—and, indeed, how much we can reduce crime because we are better at solving it—is a really interesting one. Up here, we are combining forces with public health in some areas, particularly in the analysis of drugs and in toxicological analysis, to try to reduce drug-taking. Of course, that has enormous benefits in the provision of toxicology services but also in the way in which the data is used. It is not used for just one purpose, but for more than one. That has a greater societal benefit because the information that is produced by our forensic toxicologists feeds into public health information to try to reduce drug-taking and drug death. So there is a synergy—a symbiosis, if you will—between how data that is generated for one purpose can then be used for another. This creates a greater societal benefit and value to the cost of those tests within the different agencies and organisations. So it is quite a complex picture, but it is a very interesting question. You were absolutely right: I do not have an answer for it, other than my musings.

The Chair: If you could find the answer, that would be wonderful, but it may be difficult.

Professor Niamh Nic Daeid: I shall do my best.

The Chair: Baroness Northover has some more questions on funding.

Q12 **Baroness Northover:** I was going to ask exactly what Baroness Young asked, because it sounds as though we have models in Scotland and Northern Ireland that are working better. That is very helpful; we can draw from those. I would be very interested in the answer to the question that Baroness Young just put, which I have noted down as the

comparative cost per head between Scotland, England and Wales.

I remember, post the banking crash, austerity and so on, the pressure to close quangos and suchlike, as well as the debate over what has happened to forensic science in the UK. I am struck by the fact that our witnesses do not feel that that, in itself, was necessarily a retrograde step. The market initially seemed to work, but then it did not. I remember lots of debate at the time about whether it would work; in the end, it has not worked.

The question that I have in front of me is about whether this area needs more central funding from the Home Office but, as you rightly point out, there are all the other pressures on the MoJ, the Home Office, the police and so on, so that is not a simple ask. How do you think this might be structured? I heard the point about public health; public health in England and Wales has not been ring-fenced in the way that the NHS was, so it has been under pressure. Environmental regulations and how they are implemented have also been under pressure. How would you take this forward into something that is workable, given all the other pressures on the Home Office and the MoJ—not least what we are seeing at the moment in terms of the MoJ's concern about prisoners being released and the huge public anxiety around that? Where do you fit in? Something that may come down the track are miscarriages of justice a long time into the future. What financial model do you see being taken through?

Professor Carole McCartney: One of the biggest issues that needs to be tackled first—this relates to the early part of the discussion—is that the impact of forensic science is very difficult to articulate. There was a project undertaken by Marie Barrett at the Home Office—during Covid, unfortunately; it stumbled for that reason—which was a real attempt to try to gauge the impact of forensic science. It sought to put it in front of people in concrete terms: “If you invest in forensic science, you get a massive return on your investment”. It is highly complex, and her team went quite a long way down the line, but the project ended before it got to an endpoint. One of the things that we have recommended is that that work needs to be picked up again.

One of the difficulties is that it is too easy to sideline forensic science when people do not appreciate its value, because they do not understand that it would be useful and is a good place to invest their money. One of the other difficulties is that it is almost impossible to know how much money is being spent. We have a colleague, Tiernan Coyle, who has been spending all of his free time at the moment doing freedom of information requests to 43 police forces, asking, “Please tell me how much you spend on forensic science”. It is almost impossible to get an answer. Some of them spend it under capital expenditure, while others spend it under something else. It is so complex and there is no transparency, so we do not actually know. We know how much the private providers say the market is worth—about £100 million—but not how that money is actually spent.

Of course, we have a lot of investment going into the police. There is a lot of work being done on science and technology. I was at a meeting last week where it was said that we are spending £2 billion on science and technology in policing. Sadly, 97% of that is spent on trying to keep systems going, because they are so old and are creaking at the seams, but there is a lot of money being spent and a lot of innovation going on in science and technology and in policing.

The difficulty is that forensic science is seen as a very distant cousin to that agenda. It is very peripheral. I am almost more frightened that forensic science will get even more sidelined, because we are going, "AI and digital, let's get all the facial recognition vans around the country". All of the money is being spent on that and we are starving forensic science yet further, because we do not have a way of demonstrating a return on investment.

Professor Angela Gallop: Again, if we had a national forensic science institute, one of the things that it could look at is trying to make sure that there is much better clarity and awareness of what is involved.

Baroness Northover: Would that national one join up England and Wales, Scotland and Northern Ireland?

Professor Angela Gallop: It absolutely could do.

Professor Carole McCartney: Well, we hope that they would speak to us.

Professor Angela Gallop: We have a long history of collaboration.

Professor Niamh Nic Daeid: There are definitely synergies and opportunities to look at a broader definition of forensic science. We did this in the Sydney Declaration—the paper I mentioned earlier—for a reason. The reason was that the approach of a forensic scientist can be brought to other areas of practice that equally require an understanding of detection, recognition, recovery, examination and communication of the outputs, in terms of the interpretation of data that is done in context. That sits very nicely within public health and environmental sciences. So there is an opportunity to combine forces, as many of our colleagues in Europe do, because there are other ways in which the application of our sciences can be used to good advantage.

The work that we have done here in the Leverhulme centre over the past nine years has charted a journey through the set of strategic conversations that I spoke of earlier. We have brought together the voices of science and law specifically—policing is not always in the discussion—so that we can have frank discussions between the scientists who do the science and the lawyers and judiciary who use the science for public good. We can say what problems we think we have and how we can, collaboratively and collectively, work together to propose a set of solutions, whether they require research from academics or practice; whether they require public engagement or science communication;

whether they require investment; or whether what we have already exists somewhere else, so we can go off like little magpies, take science that has been done elsewhere and use it in a way that secures it for our own industry.

Yes, we need investment, but we also need to be smart about how we choose to use that funding and investment, because money is tight everywhere. In order to do that, we really need to combine forces. We need to think what ails us and how we can work together across that whole community of practice—from crime scene to courtroom—involving the public where appropriate and necessary, in order to make the best use of what we can do.

Science should be with the scientists; that is what scientists do best. We are very good at it. However, controlling what other people think we need to do is not going to work. We might not need technology. Science needs to come before technology, so that we know that we are taking technology in order to develop it ourselves—or technology that others have developed—and are using it in a way that is fit for purpose for our justice system.

A good example is cell site analysis, where we borrowed something from a different industry and tried to get it to do something that it was not designed to do: accurately pinpoint where a mobile phone is. That is not how cell sites work—at least, it is not what they were designed to do. We have to be really careful about just adopting the new thing without thinking deeply about whether or not it is worth our while to do so and whether it helps the justice system, which is what we all want to do.

Q13 Viscount Stansgate: I have just a few questions about the Forensic Science Regulator and accreditation. How difficult is it for the Forensic Science Regulator to enforce standards for forensic science provision, are there enough resources for this to be effective in your view, how effective is the current accreditation process, and should expert witnesses be accredited?

Professor Carole McCartney: One difficulty is even answering the question because it is very difficult to make an assessment of how easy it is to accredit things. Again, I think an assessment should probably be made at this point of how successful the Forensic Science Regulator has been. We know it has had repeated problems with police accreditation. Police have set up laboratories or have had fingerprint bureaux and so forth, and they have not been able to get accredited. We now have the problem of crime scene examination being accredited but then having huge adverse consequences in the capacity of crime scene examination to actually undertake it. I believe that has now been suspended because of the problems with it, as it is actually creating real obstacles to efficient crime scene examination.

The Forensic Science Regulator has had a big impact, considering that it has a very limited remit. You talk about expert witnesses; a lot of the problems with forensic science are nothing to do with laboratories or

forensic scientists. The Forensic Science Regulator is really focused on accrediting laboratories, techniques and technologies and so forth, but a lot of the problems are still with disclosure—with the fact that there simply is not access to a defence expert.

There are a lot of problems in that, although we have the Criminal Procedure Rules and the Criminal Practice Directions, they are not being used to great effect. I trained some criminal barristers last year and I asked them at the start, “Who has used the Criminal Practice Directions—the sections on checking for experts and reliability?”, and about 70% of them said, “No, I’ve never used it. It’s never come up”. They are simply not using the tools that are already there to gauge reliability and check for expertise.

I have already pinpointed the problems with legal aid and that an awful lot of forensic scientists are working pro bono and do not get things disclosed to them. We heard of a case where prosecution experts turned up at a trial. They met with the defence experts before the trial—which is ideal and what we all want—and it turned out that the defence experts had more access to evidence than the prosecution experts had. Once they had a conversation, the prosecution realised that their findings were now all incorrect in light of what the defence told them and so the trial collapsed.

The Chair: What is the answer to Viscount Stansgate’s question? Should expert witnesses themselves be accredited?

Professor Carole McCartney: We have tried that with the CRFP and it did not work, and I am not sure we have a way to do that. They do it in Norway—we could perhaps look over there—and in the Netherlands. But it is very difficult to do, and I would not personally recommend it.

Professor Angela Gallop: I think we should have it. Unfortunately, the CRFP, which started in 2000 and then was closed down in 2009, was just beginning to get somewhere and judges were just beginning to ask witnesses as they gave evidence, “Are you accredited through the CRFP?”. But I think that the Home Office wanted it to be self-funding and of course the forensic science community is so small that that was probably never really going to happen, so that is why it was closed down at the end of the day. But for me and other forensic scientists it was such a shame, because suddenly we were thrust back into where we were in the 1970s and 1980s, where anybody could stand up and say they were a forensic scientist, and some academics—forgive me, Carole—had splendid backgrounds and sounded as if they would be wonderful, but they did not really have any practical experience at all in the kinds of evidence that they would be talking about. Then there were lots of charlatans as well—people who thought, “Well, I’ll say I’m an expert in this and it’ll be fine”, not realising the damage that they were potentially doing.

The Chair: Are there still charlatans?

Professor Angela Gallop: Absolutely. Why would there not be? How do the courts know whether someone who has brilliant academic qualifications is able to judge scientific evidence in the way that they need to be able to? I am absolutely certain that our courts suffer from them every now and again—they are bound to.

The Chair: So accreditation would be a way of preventing that problem.

Professor Angela Gallop: Yes, some kind of accreditation would. It is all about proportionality. You just have to work out what you actually need. The CRFP was so good because scientists were peer reviewing other scientists. That meant that it was people who knew what they were doing instead of, for example, lawyers trying to work out whether they have a good scientist. They would probably know it only if they had had some successes in cases in the past—and who knows what those successes might have been based on. So it was all a bit difficult.

The other thing I wanted to say was that the fees that UKAS, the accreditation service, charges for accrediting laboratories are absolutely huge, and something needs to be done about that. It might help with laboratories but also the police getting accreditation if that was looked into.

The Chair: Accrediting laboratories is one thing; accrediting an individual is another. How do you distinguish between them?

Professor Angela Gallop: Absolutely, but they sort of cross over. At the moment, when it is accrediting laboratories it looks at training records and things like that relating to scientists and sees whether they should be all right—their proficiency test record and that sort of thing. It is a bit of a fuzzy area at the edges there.

Professor Niamh Nic Daeid: I was a lead assessor for the CRFP back in the day, and I certainly advocate that there is a necessity for assessing that an expert is able to provide their expertise in a way that brings together both their experience and their scientific understanding and credentials, et cetera. It is having the two together that really provides an opportunity to assess whether that individual is competent or maintains their competency in a particular area.

I also act as a technical assessor for ISO 17025, not in this country but in the Republic of Ireland, so I also agree with what Angela has said in that there is a connectivity between the two, but while UKAS or ISO 17025 requires people to be competent, it does not necessarily test that competence per se. On the one hand, in other professional disciplines, our professional bodies would provide that level of reassurance that an individual not only has the academic training but can also deliver in practice. The Institution of Civil Engineers, the Royal Society of Chemistry and so on have chartered status for their members—indeed, I am a CChem, a chartered chemist. So you get a badge, as it were, for the kind of root discipline that you come from, and there are requirements to maintain professional development and so on and so forth.

We do have a Chartered Society of Forensic Sciences, our professional body across the forensic sciences, which also has a potential opportunity to try to drive the delivery of some sort of assurance or reassurance, although this is complicated because there are so many different bits of us—as I said earlier, plumbers and carpenters, et cetera. It is challenging to do. The different discipline areas are trying to do it to some degree.

However, a number of years ago I worked with the fire investigation community—part of my stock in trade as a forensic practitioner is fire investigation—and I was quite taken aback to understand that approximately 90%-plus of fires are investigated by people with less than a day's training in fire investigation. That is the world that we live in for some areas. As professional practitioners in these discipline areas, we need to have reassurance, as indeed do the courts, that we are bringing people who really know this business and have the competence through training, education and experience that they bring to bear to the challenge ahead of them. The real challenge, or one of the challenges around competence and maintaining of competence in England and Wales specifically, is the churn of the workforce.

As more people with a lot of experience have left the workforce and people with a lot less experience—not necessarily less scientific training—come into the workforce, you have that loss of competence. That is a real challenge. But equally, forensic scientists bring their scientific curiosity to the table, and we can do that only if we are given the opportunity to actually be scientists and have that curious nature, when sometimes we get something that we have never seen before—going back to Angela's china cups—and we have to use science to try to figure out what we are doing. It is a mixture of all these things. It is not just getting a badge to say, "I can analyse it". It is broader than that in terms of the competence that a forensic scientist needs to have.

Viscount Stansgate: Just one quick point, Professor. You mentioned the RSC chartered chemist qualification. Where in this whole area do public analysts sit, because they are also members of the Royal Society of Chemistry? Is there any relevance you would like to bring to the attention of this committee on the work it does, given that, as I understand it, it is made up of a somewhat declining band.

Professor Niamh Nic Daeid: That is a good question but not one I can give you a succinct answer to. The role of the public analyst is important. Many of them are, as you said, also chartered chemists and that status gives you a credibility and reassurance that you are a chemist in practice. You are somebody who practices your craft on a regular basis, and maintains continuous professional development and the other elements and hallmarks of a professional practitioner. The question about public analysts is something that I cannot directly answer for you, I am afraid.

The Chair: We are going to come on to the proposal for a national institute for forensic science. But before that, Baroness Northover, do you want to come in on this?

Baroness Northover: I just wanted to come in on this point. I have been wondering about medical experts, as you have been talking. That field is sustainable. Obviously, practising doctors take out expensive medical insurance and then there is the NHS paying out for things, too. But medical experts are playing a major role in cases. In terms of the regulation and funding, I am wondering whether there is anything that can be drawn out of that model that is working from the point of view of winning cases, as it were, into what you are talking about here.

Professor Carole McCartney: You need to be careful with medical experts, because, when you say it is working, an awful lot of people would argue that it is not working terribly well at all. There are obvious cases in the press regularly. The British Medical Association has another histopathologist under investigation who has been going around the country testifying repeatedly in cases where children have broken bones, and it has been found that he does not have the expertise that he has been claiming. So there are real problems with the, say, charlatans in the medical field as well. There have been reports on that, and the Hillsborough law might be useful here in terms of bringing some responsibility to bear—there has to be candour and so forth. But in the medical field, there are real question marks over people, particularly those who retire or move out of the field, set themselves up as experts and then work as expert witnesses, rather than medical practitioners who happen to be drawn into a case. There are people who make a good living out of being experts, and that is highly questionable.

Professor Angela Gallop: Medical experts tend to get paid an awful lot more than forensic scientists.

Q14 **Lord Ranger of Northwood:** Thank you so much for this crash course in forensic science for a lay person. I cannot say I am in any way near an expert or aware of this area in detail, but I am aware of how you lobby for funding and government attention. In part of my career, I have had to do a bit of that. Before I get on to the question about the institute, I was not for this inquiry and will tell you why. There have been seven reports since 2005 and not much has changed. That makes me question why we should do another report. Part of the question is: what should be different this time? For example, you were mentioning, Professor McCartney, that it is nearly impossible to get the figure for pound invested and return. Unless you have that figure, it is going to be difficult to get political attention. You do not have a Minister or the noise. We can say everything we want but without that information, it is hard to make the argument. I stress that we need to look at that.

Then there is the question about the national institute, which was recommended in the 2019 report and has not been taken up. Is there a specification that you have for what the exact functions of that institute would discharge and how it would operate? Maybe that has changed since the report in 2019 because times have changed and there is a different world, which includes a lot of technology. I think I heard Professor Nic Daeid say it is not about the technology. But it is about the technology

now. There may be a need to embrace what is happening in the world of technology. How would that institute do that in terms of research and expertise, and in terms of there being a key point on information storage, data and archiving? Has that been speced out or looked at again in the current context of where things are?

Professor Carole McCartney: In terms of exact specifications, we have just written this report in our spare time as a hobby. We have not had the time, nor probably should it fall to us, to say what the exact parameters ought to be. That needs to be a conversation with the community, police stakeholders and so forth. But we have set out that there is always a complaint about a disjoint between research done and the operationalising of research. Police will always tell you, "Oh, but academics do not do the research that we want done", and then academics will tell you, "We can't get access to real-world data and cases that we can help on", and so forth. So it is about breaking down those barriers. The chief scientific officer of the police has started doing that now with the policing academic centres of excellence. So it is being driven that police and academics have to work together and collaborate on research.

On technology, you are right but some of the difficulties are that some techniques require very expensive kit. If there is no investment in it, why is a forensic provider going to spend the money on that kit? Perhaps you could have a national resource. Sometimes a medical bit of kit is needed for something that these people over here are using for something else. Occasionally, a forensic scientist might say, "Please, could I borrow your"—Niamh could fit in the technical term for an expensive microscope here, or some bit of technology. But forensic scientists cannot maintain that on their own because they would not be using the kit often enough. So there is an important role that the institute could play on access to the technology that forensic science could not justify on its own but could use as and when required.

Those were a couple of important matters—focusing on a national strategy for research and highlighting the areas of research interests that have been co-produced with all the stakeholders, but making sure as well that you can do blue skies, horizon scanning, ground-truth database work and so forth. All those things are the non-sexy things that do not get funded, and then there is maintaining the technology. Those are a couple of things that would be at the top of the to-do list of any institute.

Q15 **The Chair:** Would the national institute have a role in archiving evidence? We have heard some rather alarming reports that a lot of potential archive evidence has been lost or damaged. Would that be a function of your proposed national institute?

Professor Carole McCartney: I do not think so. We already have a forensic archive. I have done a lot of research on police evidence with a colleague of mine, Louise Shorter, and there desperately needs to be something done about retaining evidential materials because, with the

closure of the FSS, responsibility was dispersed to every police force to now keep its own investigative materials.

It is costly and they are not experts in how to do it. So really, we should just take it off them. It is not something that individual police forces should be doing. They do not have the expertise and the money. You could expand the forensic archive we already have, which was just for Forensic Science Service materials. It has been opened once because a company went bankrupt and its materials were archived. But you could expand that or create a national archive.

The Chair: Who is responsible for the national archive, such as it is now?

Professor Carole McCartney: The Home Office. It has a tiny budget because it is very small and has to argue for the money every year.

The Chair: And the loss or damage of evidence is down to that archive not being well managed?

Professor Carole McCartney: It is not the forensic archive that is not managed, it is the storage facilities of each police force because they have been cobbled together. Some forces have invested in it but it requires a big investment. Of course, if you are looking at policing, then building a big storage facility is not obviously top of a list of many forces' priorities. Some of them are just old cell blocks that have been turned into cupboards.

The Chair: Professor Nic Daeid, tell us about the Scottish experience.

Professor Niamh Nic Daeid: In Scotland, we have worked hard together over the past number of years, particularly since the advent of the funding for the Leverhulme centre, to determine the research strategy required to benefit the criminal justice system. I agree with Carole that the approach that we have always taken is to be completely inclusive of all the stakeholders within that system, whether they be judges, lawyers, police officers, forensic scientists or, indeed, members of the public, because that voice is important here as well. That has developed a whole set of strands of research that our colleagues now within the academy undertake in lockstep with the practitioners. That bears an enormous amount of fruit.

The Scottish Police Authority forensic sciences lab up here has, and is, also developing its own research, development and innovation strategy over the next number of years and presenting that to those that pay it. There is a cohesive strategic direction that is going forward, which intercalates the forensic science or scientific provision with not just the needs of policing but also the needs of the broader criminal justice system—and, of course, the scientific needs. In terms of technology introduction, I would not say we should not introduce any technology. Of course I would not say that. But we need to introduce technology that is relevant and make sure that that technology is fit for our purpose.

I will give you an example of perhaps some unintended consequences as we developed DNA technology over the years to make it much more sensitive. The consequence of that was complex or mixed DNA profiles, which we needed then to work out how to unmix. The unmixing of those DNA profiles caused us another set of circumstances because we use algorithms to do the unmixing and commercial software to generate or make those algorithms work. So you start to get different results coming out of the same data but tested by different sets of algorithms. Thus, an unintended consequence of a rampant drive forward with technology needs to mean something first. We need to pause and think about what we might want to do.

We need to have a technology base that is for specific purposes, working with industry to not just use something that it has already created but use it for a different purpose. To work hand in glove with industry to create new products and innovations that we require, such that we can make best use of technological advancements, particularly in nanotechnology and other sort of areas like that, will work for us. We do not have to have things that are the most sensitive instruments going. We must have things that will work in messy, horrible environments in crime scenes such that we can derive from it the information required but, with a weather eye to the future, gather the right things at these crime scenes in order to preserve them, so that we can test them in the future as technology moves forward and develops.

As for archives, there are two different types of things. There is the archive that stores stuff—materials recovered from crime scenes or from individuals—and then there are archives that store data. As we progress with looking at and exploring how we can use things like machine learning and artificial intelligence to our advantage, data becomes key and king. We are not good in this country at storing data relevant to forensic science. What I mean is that we are not good at generating it. We can use our PhD students to generate what we call ground-truth data; that is, we know where it comes from. We can create large amounts of that data and make it available. Our centre does that on a routine basis. There are also huge amounts of data tied up in our laboratories—data from old tests, say, of footwear marks or sole patterns of shoes that have been gathered over the decades or many years that are just sitting there. If we made that data available in cases that are disposed of, and we mine it and create data lakes and architectures, we can use that to provide large amounts of information to the academic community to generate AI models that will do what we want them to do. Then we are in business.

I would draw your analogy to the way in which, again in Scotland, although it is done elsewhere, that public health data or medical data is being used to provide innovations, for example, in using AI to identify breast cancer or glaucoma. It is because data that is gathered and has been secured in data lakes and trusted data environments is used to enable academics to do research on that information. That is what we and our institute should be doing.

The Chair: Are you saying that that the real problem is data storage rather than the blood-stained t-shirt?

Professor Niamh Nic Daeid: It is a matter of both. There is storage for items, exhibits or productions that are collected at crime scenes and our current forensic science archive retains some of. It is the kind of material that Carole was talking about that the police are holding on to. But there is also the data derived from the examination of those items, as well as the data held in forensic science laboratories.

Professor Angela Gallop: The archive we have at the moment, built after the demise of the Forensic Science Service, after many years, is now a really good archive and would make an excellent base to be expanded. It is important to keep these physical items so that if somebody is saying, "I did not do it, it is a miscarriage of justice", or if you want to go back and try to reinvestigate a case, you have the raw material to do that from. That is critical.

I wanted to make a point about research and development. You also have to make sure that the potential users of what you are doing are keyed into the whole project and actually going to use it. I can think of three huge research projects carried out by private companies. The police all the time were saying, "Yes, this is exactly what we need". When the time came, and we said, "Can we trial it now because we have got it to a certain stage?", they say, "Well, actually, when that force uses it, we are not quite ready for it". It was just a horror show on three separate occasions. There was some really good technology, but you have to be careful about that.

Professor Carole McCartney: The Law Commission of England and Wales made recommendations about an archive in its appeals inquiry, so it is already making recommendations and looking at that area, too.

The Chair: That is useful.

Q16 **Baroness Willis of Summertown:** Perhaps I may follow that previous point. Where do you envisage this archive being? I am trying to find out the solutions here. How do we actually turn this around? We are hearing so many depressing anecdotes. What would be good for us to recommend as to the way in which to do this? If you were to have an archive, would it be a physical archive? Would it need to be like the National Archives? Where would you place it and what sort of size and facility are you thinking about?

Professor Niamh Nic Daeid: There are two different elements. One is the archive that Angela was talking about, which is an archive for physical things—items of clothing, different items recovered from a scene—to keep those in a way such that their integrity is maintained and in future we may have tests that we can use on them. Or, if there is a question over whether there might be tests that could have been done that were not, that can be revisited. That is one element.

The second is an archive or repository for the data that forensic science laboratories generate through casework, but also that academic institutions generate through research work: a data storage facility which should, in my view, be a national asset. It could be a computer or a series of servers, but we need a national asset such as that so we can then provide access through the trusted research environment—in the same way that medical research works, for example—to enable further research, particularly around leveraging machine-learning applications, if that is a direction of travel we want to go in, and it seems a sensible one to take. Making it a national asset should then create a means or mechanism whereby Governments can get behind it and find provision for supporting it as a piece of national infrastructure.

Baroness Willis of Summertown: This is why I come back to a national infrastructure or archive. I was director of science at Kew for a number of years, and there is still a huge question mark over where the herbarium will go, because no research council wants to fund an archive. There is no business model that wants to fund these sorts of archives, so we need to work out what that means on the ground.

Professor Carole McCartney: The Home Office have got plans to make a national archive because they recognise how much money is being spent by police forces on these things, although ideally it would not be a police archive.

Baroness Willis of Summertown: If you are going to put it in a national bank, it is about identifying what that means in practical terms. We have moved on to research and development priorities and the need to strengthen the sector and attract new students, and for many disciplines to come into the sector. Are there master's programmes or particular training schemes that ought to be set up to bring in the next generation? Or is it not an issue to get the right students to follow through?

Professor Niamh Nic Daeid: You have put your finger on the pulse. We have a very traditional model of education right the way across the whole of the UK. We deliver a set of undergraduate degrees that have forensic science in their names; some of these degrees are excellent and some are not so excellent. Many of them will teach a little bit of science and then bolt on forensic applications, which means that in some cases, but not all, we produce graduates who do not know enough science to be useful within the forensic science domain. Other universities produce master's degrees in forensic science or various specialities like forensic anthropology or archaeology, or other subdisciplines. Here they bring in graduates who have an undergraduate degree in the relevant subject, and they provide forensic application to that subject.

We are getting to the point at which the output of some of those degrees is no longer fit for purpose, because forensic science and its use is changing as the world is changing. We now need graduates who can code, do mathematics and data curation to a greater extent and are able

to communicate science in a more profound way. We need a different skill set to come into our laboratories than traditionally did.

I taught forensic science at master's level for over 20 years, and it has always been the case that when we produce a graduate who goes to work in a forensic science laboratory, one of the first things that happens is they are retrained in all the skills in which we thought we trained them—how to do fingerprinting, chemical analysis or whatever it might be. There is a disconnect between what is needed and what we, as the academy, provide. We are simply not listening, and have not listened for some time to our colleagues in practice.

We may now be looking at a landscape where continuous professional development, micro-credentials and CPD courses that are short and sharp for existing practitioners also upskill our graduates as they leave; that might be a better way of looking at it. At the same time, forensic science graduates are provided with almost no training in law, so they do not know what they are walking into in terms of their roles and responsibilities to the criminal or civil justice systems, in the same way that our legal graduates know almost nothing about science. We have been trying to tackle that for some considerable time, but that disconnection now occurs more profoundly.

The Chair: Professor Gallop, what do you think the training for the best forensic scientists should be?

Professor Angela Gallop: We should definitely do it differently. There is a role for the national forensic science institute in making sure that we have got enough of the right sorts of forensic scientists for operational work. It would not necessarily do the training, but co-ordinate it, and use existing universities—Niamh is exactly right to say we should be a bit more imaginative about that—for scientists and detectives, and people who use forensic science, so that we are all on the same page and use it properly. It is quite an exciting area, but it needs co-ordinating and a framework established, but we have got all the bits. When we were writing this report, we found that there is quite a lot of infrastructure there; it just needs knitting together in an imaginative way.

Baroness Willis of Summertown: Do you think that UKRI has a role to play in this? Professor Nic Daeid, I note that your excellent 10-year funding is from Leverhulme, not from UKRI. To me, that indicates that it does not come from any mainstream research councils. Is that another area one should be exploring and asking where the Government are putting funding?

Professor Niamh Nic Daeid: It is. The Leverhulme Trust had the foresight to fund, back in 2016, disruptive research centres. We pitched for one and we got the funding. It was competitive funding, both institutionally and once you got your bid out into the world. We did that because there was no funding elsewhere. I think UKRI is making some effort; it produced a forensic science sandpit in 2023, which I attended,

and I am part of two consortia that received some of that funding. But we are letting it off the hook a little bit, if I can speak bluntly, because the funding for those three projects was about £2 million, and that is simply not enough. I have received UKRI funding for other projects that were obviously related to forensic science, and funding from all sorts of other areas, including philanthropic funding. The challenge with the forensic science sandpit in 2023 is a good discussion, and it produced some interesting outputs. Only one of the projects funded was in science, as in physical science; the other two are social science projects that border on criminology, which is fine and has its place, but it is not funding the core science. It is not funding projects to determine the persistence of fibres or DNA on materials, and that is what we need funded if we are going to interpret what finding those traces means in the real world. There is a pile of work to be done on how we engage with UKRI and how we work with it to try to get the right level of investment into this domain.

Professor Carole McCartney: I have two quick points. One of the reasons I am here to give evidence today is because I am on strike—I should be on a picket line with my colleagues because university departments are being closed, and it is not only arts and humanities. Our chemistry department is being closed, as have other chemistry departments, so your scientists of the future are getting fewer and fewer choices. Also, we found the graduate salaries for forensic scientists in this country are deplorable, so they cannot keep hold of the graduates. The churn is amazing because you have done your science degree, you are expecting a nice high salary in a STEM subject and then you cannot get that kind of salary in forensic science, so they cannot retain the talent.

The Chair: Lord Lucas, do you want to come in?

Lord Lucas: I rather thought my question had been answered by Professor Nic Daeid.

The Chair: I think it has. We want to move on. You have been very patient in answering our many questions. We are drawing to a close and want to ask you a bit about what you think our responses should be, both in terms of your commission report and following up on our 2019 report.

Q17 **Baroness Young of Old Scone:** You gave us a lot of evidence about who is responsible or not responsible in Government terms. Since our report, have you seen any signs of life in anybody taking an interest or responsibility?

Professor Carole McCartney: Only like I explained earlier about the Home Office doing a big piece on police reform. Forensic science is part of that but we do not know how big a part. Like I say, it is only the police and only the delivery of operational forensic science. It does not consider any of the other crime scene court expertise and research and so forth.

Baroness Young of Old Scone: There was an announcement in November on the national centre of policing. Are there any signs of life there?

Professor Carole McCartney: The announcement was that the Government hope at some time in the future to have a national centre for policing. It has not happened. We do not actually know if it will happen.

Baroness Young of Old Scone: Do we know what aspects of forensics it would take?

Professor Carole McCartney: No. We just keep hearing the words centralisation and nationalisation but do not know what that means. That is why I recommend you speak to the director of the Forensic Science Service because it is her job to sort all that out and I hope she knows the answer to those questions.

The Chair: We hope to have her as a witness. Professor Gallop, do you want to add anything?

Professor Angela Gallop: I do not think so particularly. There are lots of rumours circulating in the forensic community, but I do not think that is particularly helpful.

Baroness Neuberger: We know that you definitely want us to recommend and push for the national institute. We got that loud and clear. We have to make this pretty sharp. We have obviously had lots of reports. You have made it very clear that not a lot has been done. If there were one thing each of you really wanted us to say, what would it be? Professor Gallop, why do not you start?

Professor Angela Gallop: Just stop this drift of forensic science into the police and the prosecution, because it does not sit comfortably with the science and does not sit comfortably with our adversarial criminal justice system.

Professor Carole McCartney: One of the important things to do to stop that drift is proper investment—somebody responsible for this who is going to invest their time as well as money into it.

Baroness Neuberger: Responsibility. Fine.

Professor Niamh Nic Daeid: Adding to what my colleagues have said, I think we need to think differently about the positioning of forensic science within the criminal justice system in the UK, in England and Wales specifically. But one thing you could ask for immediately would be to put the development of research, and in particular the use of research data, into the frame of the creation of a national infrastructure for forensic science research and frame it in that way so that it begins to align with national infrastructure projects for other things. It is a language people will understand.

Baroness Neuberger: It ties together with the national institute and so on, so you get a shape to the whole thing. Thank you very much indeed.

Baroness Walmsley: It has been a very informative session, but two groups of people have not been mentioned this morning. You might think

that a cross-party group of politicians might have those people in their minds, especially since we are reporting to the Government, who are political by their very nature. Those two groups are the victims of crime and people regarded as the accused. Can you say whether you think those two groups should appear in our report and, if so, in what context?

Professor Carole McCartney: We tried in our report to tie this into the government missions for reducing violence against women and girls, safer streets in respect of road collision investigations, halving knife crime, and economic growth. You cannot have economic growth in a society where there is no law and order and crime is a problem. All these will benefit from investment in forensic science. If you want to tackle violence against women and girls, forensic science is a key to doing that. It should be front and centre but it is very peripheral at the moment. We need to plug it into those missions we already have.

Professor Angela Gallop: I absolutely agree that those are the two groups of people intimately affected by what goes on.

Baroness Walmsley: Any one of us could fall into one or other of those categories at any time.

Professor Niamh Nic Daeid: I agree entirely. In our research centre, we have a citizens' jury, made up of ordinary members of the public against whom we speak to our research and they tell us what they think. They tell us very plainly sometimes what they think of the area of travel. Other parts of Scotland have national assemblies. The Republic of Ireland has a citizens' assembly. These kind of citizens' voices are really important, particularly for the use of science in such an important space, so that we make sure that we get it right. It also means that the victims and people who are accused, falsely or wrongly, have an opportunity to have their say in how we use science within these most important areas of our society.

The Chair: I thank all three of you very much indeed for answering so many of our questions; we are very grateful, especially to Professor Nic Daeid, for your patience in being cut off more than once. You have been excellent every time you have reappeared. This now concludes today's public session.