

Medicine and law – “little territory in common?”

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Professor Harry Zeitlin: Can I welcome you all.

By way of introduction, I am Harry Zeitlin; I am stepping down now as President. It has been a great privilege for the last two years and it comes to an end now as it should. During the whole of this time, we have shared a horrible experience due to Covid but the Society has risen to the challenge. Right at the start, Diana Brahams, our Editor here, agreed that we would start writing papers about Covid before others realised quite what was going on so we were able to react to it constructively.

It has been very difficult. We held our meetings on Zoom as people were not able to travel, but this allowed a considerable number of people to join our meetings from distances which had not been previously possible. We encouraged that and I should say that Malcolm Brahams was a great help in setting up our systems. It was not always easy. Am I right, Malcolm?

Mr Malcolm Brahams: Zoom meetings are easy, hybrid meetings are not.

Professor Harry Zeitlin: So, one effect of the negative, horrible experience of Covid was that we could have people from different parts of the UK and countries as far away as India joining us and joining in with the discussion.

Very sadly last year we lost our excellent secretary, Sandra Marcantonio, but we have been very, very fortunate that Evelyn Palmer took this over and has been wonderful.

That brings me to saying thank you to all of the team who make it all happen; who give their time without expecting something back. I have sat on a great many committees and you would be amazed at how many people do it because they want something back, but our team are not like that.

I wish the Society the very best for the future. You are not going to get rid of me because I am going to be down there in the audience, but first I want to introduce our new President, Simon Readhead. Simon is one of His Majesty's Counsel, a Master of the Bench of the Middle Temple and the joint head of Deka

Chambers in London. He is authorised to sit as a judge in the criminal, civil and family courts.

Simon has wide-ranging practice in medico-legal law, and my notes say that he has a special interest in catastrophic injury claims including birth trauma – I am writing a report on that at the moment – and other neurological injuries, particularly involving the head and spine. I don't want to anticipate anything he will say, but the interaction between law and medicine is fascinating.

It has been a time of great stress on health in this country, now we, as a Society, can help young doctors and lawyers move forward and feel confident and improve the system.

I have a note here which says that Simon was listed in the current edition of The Best Lawyers in the United Kingdom (congratulations!), and you were described in the 2023 Legal 500 as, “A truly outstanding silk; extremely knowledgeable and skilful.” Simon has been a member of the Council of the Society since 2017, and he has served as one of the Society's trustees for the last three years.

We look forward to the next two years. Welcome to the presidency. (*Applause*)

The President: Thank you very much, Harry. Good evening, everyone. I would like to extend a particular welcome to all those joining tonight remotely, particularly our overseas members in America, Ethiopia, India and elsewhere. It is both an honour and privilege to have been elected to serve as the Society's next president. My first and important duty is to recognise the contribution to the Society of my predecessor as President, Professor Harry Zeitlin. During a long and distinguished career, Harry became an internationally recognised authority in child and adolescent psychiatry. After joining the Society, he became a member of

the Society's Council and, for many years, he combined that role with that of medical editor of the Journal.

Harry took over as President of the Society in October 2020 immediately before some of the darkest days of the lockdown. He will, I think, always be remembered as the "Pandemic President". Throughout the whole of his time as president, Harry remained unfailingly cheerful and upbeat. As soon as it was possible to do so, he was quick to encourage the resumption of in-person meetings judging, rightly in my view, that it would be good for the Society and good for all of us too. We all have many reasons to be grateful for the immense contribution that Harry has made to the Society over a great number of years. Harry, thank you very much.

I should also mention two other past presidents of the Society, one of whom is here tonight, Roy Palmer and Bertie Leigh. Both stood down from serving on the Council in June of this year after, we think, some 90 years of combined service! That is a simply astonishing achievement. Again, it is entirely right that we should recognise the enormous contributions that Roy and Bertie have each made to the life and the work of the Society over so many years.

In a speech which he gave in March 1944,¹ Sir Winston Churchill said that:

"The longer you can look back, the farther you can look forward."

So, tonight, before I look forward, let me start by looking back. Malcolm Brahams sits alongside me. Those of you who attended, either in person or remotely, the Society's meeting almost exactly a year ago on 14 October 2021 will have heard Malcolm's elegant and affectionate tribute to the Society on the 120th anniversary of its formation. If you missed it, do find and read it in the Journal.

Malcolm referred to several of the Society's eminent past presidents going all the way back to its very first president, Sir William Job Collins, in 1901. Sir William was a distinguished ophthalmic surgeon who also received honours in physiology and forensic medicine. *Plarr's Lives of the Fellows* of the Royal College of Surgeons of England described him as being "broad-shouldered with a fine head" and a "somewhat Olympian manner".²

As Malcolm reminded us, Sir William began his inaugural address to the new Society on 3 November 1902 by observing that:³

"It might, to the casual observer, seem that the science and art of medicine, whose goal is health, and the science and practice of law, whose end is justice and order, can have but little territory in common."

It seemed to me, nearly 120 years later and as the Society's 56th president, that I could usefully take my theme for this evening from Sir William.

There are, it seems to me, two immediate and obvious contrasts between medicine and law. Most medical or, at least, most scientific problems have objectively verifiable, binary answers. Scientific "laws" such as the principle of buoyancy or the theory of general relativity are universal. They do not, indeed they cannot, change. Moreover, they are not limited or defined by place or time. They are the same today as they were for Archimedes or Einstein.

Legal questions are different. There is no "litmus test" answer. This is why the Supreme Court comprising five justices, each possessed of a fierce intelligence combined with many years of practice as a lawyer or a judge, and invariably both, can divide 3–2 in relation to the same question. The law does not have the comfort of empirically demonstrable answers.

Legal laws are also of their time. In 1414 Parliament passed the Suppression of Heresy Act.⁴ This enabled the burning of heretics by providing that:

"the most notorious malefactors if they continued obstinate, or relapsed after pardon, ... should first be hanged for treason against the king, and then burned for heresy against God ..."

Today's guaranteed freedoms – of expression, of religion, of belief – would have seemed astonishing in 1414. Even now, the philosophical gulf between some of the legal laws in parts of the Middle East for example and those that apply in the rest of the world remains huge.

But there is some territory in common. The law too has basic and enduring principles sometimes referred to as maxims of equity. The rules of what is now known as "natural justice" – fairness, equality before the law, the right to be heard by an impartial tribunal and the right to a fair hearing – are of general application across all civilised legal systems and codes. In his seminal work on Ancient Law,⁵ Sir Henry Sumner Maine described the part played by equity in the development of law and in particular of the conception of:

"(A) set of principles, invested with a higher sacredness than those of the original law and demanding application independently ..."

And what seems fixed and settled in medicine may not be. Until as recently as 1984 many doctors were united in their belief that stomach ulcers were caused by stress and excess acid. By demonstrating that the bacterium *helicobacter pylori* plays a significant role in the cause of many people's peptic ulcers,⁶ the

Australian gastroenterologist Barry Marshall not only successfully challenged long-established medical orthodoxies at the time but went on to win the Nobel Prize in Physiology for his work in 2005.

There is also, I think, a similarity of objective and approach in medicine and law. Medicine seeks to bring confidence, at least of understanding, to human physiology and consistency to the treatment of disease. The law is concerned with achieving a fair balance in an increasingly complex social order through regulation and, where necessary, enforcement. The aim in both cases is to bring order to uncertainty.

This is achieved both in medicine and in law by ascertaining, sifting and evaluating the available evidence and by applying logic and reasoning to the result. Facts which are self-evident or undeniable and on which other constructs or propositions can safely be based are important in both disciplines. Both doctors and lawyers are, after all, seekers after the truth or, at the very least, seekers after evidence which is sufficiently robust to reach a conclusion which both hope is correct.

Unlike in today's celebrity culture, there is no place, either in medicine or law, for the phrase "my truth" which, on a closer analysis, usually turns out to be a combination of "my opinion" and "my experience". Neither possesses that essential, unarguable quality on which medical decisions and legal judgments should properly be based.

But with territory in common come shared dangers. The danger for lawyers was illustrated in the recent case of *Johnson v Williams* [2022] EWHC 1585 (QB), decided in June of this year. Roger Johnson was a professional footballer with Charlton Athletic who suffered an injury to his left knee in training. He underwent surgery but a subsequent MRI scan revealed a rupture or tear to the medial retinaculum which is the tendon that crosses the knee joint. The issue was whether this damage had been caused during surgery.

The judge found that this was "highly improbable"; [81]. However, he also found at [75] that it was "unlikely" that either of the other two possible explanations which were put forward had been the cause of the damage. In these circumstances it was argued that, although very unlikely and perhaps even "remarkable" ([78]), because the other competing causal mechanisms were so remotely unlikely they could essentially be ruled out, this left surgical error as the only possible cause of the damage.

The Sherlock Holmes aficionados amongst you will recognise this reasoning. In *The Sign of the Four* Holmes inquires of Watson:⁷

"How often have I said to you that when you have eliminated the impossible, whatever remains, however improbable, must be the truth?"

Unfortunately for Mr Johnson, the mistake made by his lawyers here was in thinking that a particular explanation was correct on the basis that the alternative explanations had been ruled out when not all the alternative explanations had in fact been ruled out. This is because, at least in my experience, in most complex medical causation cases it is just not possible to do this. The judge was alive to this point and opted not to find that any of the explanations put forward was, on the balance of probabilities, the cause of the damage with the result that the claim failed.

But doctors can get it wrong too. Perhaps the best-known example of this is the case of Sally Clark (*R v Clark* [2003] EWCA Crim 1020) who was accused of killing one of her babies in 1996 and another in 1998. At her trial the prosecution had to disprove the suggestion that each might have died from sudden infant death syndrome ("SIDS"). A medical expert whose competence was paediatrics gave evidence about statistics. In doing so he made a basic error in using simple multiplication or "squaring" to calculate the probability of two deaths from SIDS in the same family as being:

"[A]pproximately a chance of 1 in 73 million..." ([96ff])

As was later pointed out in the Court of Appeal (*General Medical Council v Meadow* [2007] 1 QB 462), the identification of external factors required an adjustment to what statisticians call the "outcome indicator". In particular, the evidence given at the trial could only be valid if:

"[E]ach of the deaths is truly independent of the other, that is without, at the very least, the shared genetic and environmental circumstances of the children being members of the same family..." ([132])

When these shared genetic and environmental circumstances were brought into account, after one death the chances of a second become very greatly increased by a dependency factor of between 5 and 10.⁸

I have referred to the *Clark* case deliberately because statistics is one area where there has been recent, very productive collaboration between scientists, including several doctors, and lawyers. There are other examples specifically in relation to DNA evidence. I myself contributed in a very small way to the production of a guide for advocates dealing with statistics and, more importantly, probabilities, jointly published by the Royal Statistical Society and the Inns of Court College of Advocacy.⁹

When I lecture at the College, I make a point of reminding students of what was said by the Law

Commission in its excellent paper in 2011¹⁰ on expert evidence in criminal proceedings, namely that (§1.21):

“[C]ross-examining advocates tend not to probe, test or challenge the underlying basis of an expert’s opinion ... it may be that advocates do not feel confident or equipped to challenge the material underpinning expert opinion evidence ...”

This is, I think, at least in part a reflection of the way law is still taught, certainly in this country. Legal education is often acquired in isolation. Institutions I think tend to be monolithic and to produce lawyers in their own image which, increasingly, can be an outdated one.

I studied Roman law as an undergraduate. I recall reading what Gaius, writing in about 161, had to say in his commentaries¹¹ about *manumissio* and *mancipii causa*. Interesting though this was, it taught me very little about the skills which lawyers need in practice such as the best way to assess facts or to balance the weight to be given to conflicting opinions.

In contrast, during my undergraduate years, I also worked during each of my long vacations in the mortuary of my local hospital. The experience and the knowledge that I gained there, particularly about basic anatomy, has, over the years, proved rather more valuable, particularly when I began to do medico-legal work. In addition, I still look at funeral directors rather differently from most other people.

I think – and I tell students – that for most lawyers, there is just no alternative other than to get “stuck into the medicine” if they wish to understand and harness the knowledge of medical specialists into a coherent body of evidence capable of being deployed effectively in legal argument.

To cheer them up I also remind them of the conclusion of the Irish Law Reform Commission in its paper in 2016 that:¹²

“[I]n challenging scientific methodology, it is more effective to have such evidence heard, pressed and appraised by skilled counsel who may, as the market could increasingly demand, have a developed knowledge of science and scientific methodology. Those embarking on cases involving complex scientific evidence may increasingly seek out practitioners with the relevant experience and ability ...” (§7.143)

So there is much that the law can learn from a closer involvement with medicine and, if the Irish Law Reform Commission is right, a clear financial incentive for lawyers to do so. However, I would like to think that there are also things that medicine can learn from the law.

For example, there is, I think, increasing concern in some quarters about the incidence of scientific fraud and the reliability of some experimental results, even those published in respected journals. One thinks immediately of the case series in 1998¹³ published by Andrew Wakefield and his colleagues in *The Lancet* suggesting that the MMR vaccine may predispose some children to behavioural disorders. Despite the small sample size, the uncontrolled design and the speculative nature of its conclusions, the paper received wide publicity and very considerable problems then ensued.

In particular, MMR vaccination rates began to drop because, fuelled by posts on social media – many of them highly irresponsible – parents became concerned about the risk of autism after vaccination. *The Lancet* subsequently completely retracted the Wakefield paper but not until February 2010. This was shortly before the revelation that there had been incidences of deliberate fraud in the “research”. In particular, data had been selected to support certain conclusions and some facts had been falsified.¹⁴

Lawyers and judges are well used to assessing the reliability and effectiveness of evidence albeit on a much more subjective basis than doctors. They are also good at detecting fraud or self-deception perhaps through idealism or personal ambition or, more worryingly, simply for financial gain. Perhaps the law’s more structured processes of allegation, response to allegation and reply as well as its adversarial approach to arriving at the truth can assist here? As the great American jurist John Henry Wigmore observed:¹⁵

“Cross-examination is the greatest legal engine ever invented for the discovery of truth...”

Contrary to the views espoused by some American politicians, there is no place in the law for “alternative facts”.

As medicine relentlessly moves forward, with new endeavours actively being encouraged and increasingly being paid for by “Big Pharma” and “Big Tech”, frameworks, particularly ethical and legal frameworks, are vital if ordinary people, who can have little understanding of the purpose of such endeavours, are to be protected from the growth of what Peter Huber first described as long ago as 1962 as “junk science”.¹⁶

Here too, I suggest, lawyers and judges can play a role by setting appropriate boundaries. Whether those boundaries can be policed effectively in the internet age is another and altogether more difficult question. Social media use amongst healthcare providers is increasing at a rapid pace. This allows them to build their online presence by reaching millions of people worldwide within a matter of seconds.

The cross-border nature of what is frequently called the “digital ecosystem” means that regulatory bodies need to work together and they must be supported by an effective application of the rule of law, fairly enforced and properly resourced.

Allied to this is the growing use of artificial intelligence in medicine, including for the purposes of clinical decision making. Medicine, like all science, strives for certainty. It aims to reach conclusions derived from clearly stated premises or which are arrived at after repeated observations. But what if there is no certainty? What if we just do not know or cannot say? Initially, at least, there is likely to be much about artificial intelligence that we cannot know or cannot say, or say reliably.

Collaborations Pharmaceuticals is a research and development company based in Raleigh in North Carolina in America. Its mission is to:¹⁷

“[U]se real drug discovery intelligence alongside artificial intelligence to develop clinical candidates for rare, neglected and unmet therapeutic needs . . .”

In an article published in March of this year, researchers described how a minor edit to a code meant that suddenly an algorithm for designing drugs to treat Alzheimer’s disease was suggesting thousands of chemical structures for nerve agents.¹⁸

In July of this year the government published a Command Paper on regulating artificial intelligence.¹⁹ Currently, there are no UK laws that were explicitly written to do this. Instead, artificial intelligence is partially regulated through a patchwork of legal and regulatory requirements built for other purposes, some of which incompletely capture uses of artificial intelligence technologies.

For example, UK data protection law includes specific requirements around “automated decision-making” and the broader processing of personal data, which also covers processing for the purpose of developing and training artificial intelligence technologies.^{20,21} The upcoming Online Safety Bill also has provisions specifically concerning the design and use of algorithms.

However, as the government recognises at p.4 of its recent DCMS Command Paper:

“To maintain [the UK’s] leading regulatory approach, we must make sure that the rules that govern the development and use of [artificial intelligence] keep pace with the evolving implications of the technologies . . .”

More recently, in August of this year the Law Society of England and Wales published a report on the progress that is being made in developing devices

designed to augment the capabilities of society – often referred to collectively as “neurotechnology” – and how these technologies may impact both society and the law.²²

The report considers a world where people can connect their brains directly to the internet and thereby post to social media without any bodily action. In a medical context, patients learn to manage epilepsy by way of brain implants that use algorithms to monitor and electrically stimulate their brains. Another form of neurotechnology involves decoding images and displaying them on a computer screen. For example, an imagined hand wave when interfaced with the computer monitor might be recognised as a command to move the cursor to the right.

This has significant implications for the law, particularly the criminal law. A central tenet of the criminal law is the distinction between, to revert again to Latin, the “*actus reus*”, that is the criminal conduct, and the “*mens rea*” or guilty mind. As the Law Society report points out at p.21:

“Perhaps the law might say that the mental act of imagining the hand wave is the conduct constituting the *actus reus* . . .”

I am looking forward to the day when a defendant with a neurotechnology device says in answer to a criminal charge based on the way that they have behaved, “I was hacked, guv, honest.”

So, what are we to do if there are currently no “right” answers to these questions? The processes of the law are amongst the oldest techniques that we have for making decisions in the face of uncertainty. The law takes a disparate set of facts, usually in the form of a narrative, and tries to arrange these into a comprehensible account.

The necessary decision is then made based on this account using inference and intuition derived from experience and common sense to arrive at a best explanation. This form of abductive as opposed to deductive reasoning has been the way in which the law has attempted to make sense of what, on the face of it, may make no sense at all for a great many years.

It seems to me therefore that it is vital that medicine and law – with their separate but complementary approaches to the solution of problems – work together to agree ethical principles and establish legal guidelines if there is to be effective oversight and regulation of these new advances and novel – but potentially very dangerous – technologies.

So, actually medicine and law share a lot of territory in common and, happily for this Society, it is extremely fertile territory in that there is much that we can continue to learn from each other.

Back in 1902 Sir William Collins concluded his augural address by observing that:³

“The Society which we launch tonight will from its nature appeal, not to the many, but to the few; not to the mediocre, but to the fit...”

Nearly 120 years on from those remarks, I would like to think that there is nothing mediocre about this Society and that it remains “fit for purpose”. A glance at the programme for the coming year shows the range of speakers, each eminent in their chosen field, who have agreed to address the Society on a wide variety of medico-legal topics.

The Journal, under the insightful general editorship of Diana Brahams, now assisted by Jane Turner as medical editor, continues to attract contributions from around the world to the point where Diana does not have the space to include all the articles in the Journal that have been published online and rejects a high proportion of those sent in. In 2017 there were about 20,000 downloads from the Journal’s online site. This year that number had increased to over 121,000.

The challenge as we move forwards is to make ourselves more widely known and, in so doing, to increase our numbers. If the Society is to thrive and prosper it must constantly be looking for ways to make itself more relevant and vibrant. I am delighted that we have been joined tonight by a number of people who are nearer to the start of their careers than the end and also by several students. They are the future of both medicine and law. They are also the future of this Society.

Increasing our numbers – as Anne Raikes, our Honorary Treasurer, would want me to point out – will also help with the Society’s finances. We all know that everything is becoming more expensive. We, as a Society, are not immune from that. We can all play a part here by reminding friends and colleagues of everything that the Society has to offer and encouraging them to attend one of our meetings. We have a number of guests here this evening and, assuming that they have not been too discouraged by what they have heard thus far, I hope that they will apply to become members.

As part of this initiative, whilst continuing to meet together, as we are tonight, to receive and to debate presentations to the Society, we want actively to encourage others who cannot attend in person to join us remotely and to persuade as many others as possible to do the same. We are now using our new camera and microphones which, we hope, will enhance the experience of those attending meetings remotely. We are also endeavouring to ensure that all future presentations are accessible to members of the Society via the website

and social media in VOD form, that is “video on demand”.

Why is all this important? It is important because, however hard we may strive to fulfil the aims articulated by Sir William Collins and others at that very first meeting, namely of promoting medico-legal knowledge in all its aspects, there will always be questions both of medicine and of law to which none of us, even the most learned members of this Society, can yet know all the answers. What is to be done then?

As I started with the words of an eminent 19th century surgeon, let me conclude with those of an equally distinguished 19th century lawyer and judge, Sir James Fitzjames Stephen. In his book on Liberty written in 1873, Sir James included at p.332 an observation which, I think, remains relevant and instructive to the practice of both medicine and law today:²³

“The one talent which is worth all the other talents put together in all human affairs is the talent of judging right upon imperfect materials, the talent if you please of guessing right. It is a talent which no rules will ever teach, and which even experience does not always give... All that can be said about it is that to see things as they are, without exaggeration or passion, is essential to it... All really important matters are decided, not by a process of argument worked out from adequate premises to a necessary conclusion, but by making a wise choice between several possible views...”

Thank you very much. (*Applause*)

We have time if anyone wants to ask some questions. It is a great help to Shelley Dutton, our hugely important shorthand writer, if you identify yourself when doing so. As somebody who rejoices in a surname that is both misspelt and mispronounced on a regular basis, I do encourage you to speak loudly and clearly and to wait for the microphone, otherwise you may find yourself reported in quite a different way. Do we have any questions? The invitation is extended to all those online. If you speak up, I think we can hear you.

Dr Atef Marcos: Good evening. Thank you very much for the very encouraging updating talk taking from the past and taking us to the future as well. In medical practice and in relating evidence between clinicians, a grid has been developed and been in use for some time now dividing the levels of medical evidence according to the availability of evidence, the highest level being one when there is multiple large significant studies that been corroborated by many other similar studies and the lowest which is sometimes called grid 4 or 5 according to the country and institution that is using that medical grid, is one that relates to personal and expert opinion from experts in the medical field.

This has been in use in the medical field quite widely to the extent that some of the new experts are using it to level the educational value of their comments or conclusion. In the footnote they would write whether it is Level 1, 3, 4 or 5.

The President: I hesitate to interrupt you Atef but is there a question coming?

Dr Atef Marcos: Yes. The question is, this has been used widely in the medical field and it could be useful in the medico-legal field and in court. For example, the *Clark* case that you mentioned, if it had been evaluated that the first paediatrician's opinion was just a single opinion that according to these levels would come to the lowest grade, it is quite possible that the first court may have considered this evidence in a completely different light.

My question is, is this in your experience being used in court or do you see a value to it being used in court?

The President: Yes and yes. It is being used and I do see a value. One of the problems is that scientific evidence can be tested and corroborated by others but legal opinions can only be peer-reviewed. You then get a subjective view upon a subjective view but you are absolutely right, the courts are now increasingly concerned with not only the provenance of evidence but the reliability of evidence which depends upon, as you say, the Level 1/2/3 testing process. Clearly, the higher the level of testing, the more probative and valuable that evidence will be to the decision maker.

Dr Aubrey Bristow: Dr Aubrey Bristow, anaesthesia. In a way, my question follows the previous one. Thank you for the thought-provoking lecture. Until Covid, medical experts relied on peer-reviewed data and papers and publications to provide opinions and to advise the law. When Covid came, we saw a massive increase in the amount of research that was published online without peer review which undoubtedly saved hundreds of thousands of lives and guided us through the pandemic. I expected that to stop at the end of the pandemic but, even today, in my daily email of research, there is more data that is not peer reviewed than is and it is not always obvious which is the case. I just wondered if we are having difficulty with that, how is the law going to deal with the quality of the research on which any evidence or opinions might be made?

The President: During Covid, as you rightly say, peer-reviewed material decreased and non-peer-reviewed material became exponentially greater. The courts are alive to this and it goes back to reliability, robustness and provenance. You raise an interesting question when you say that a lot of this material saved lives because that triggers a discussion around efficacy and ethics which is an entirely different lecture. The courts are very aware that increasingly, because of the need to get material out there, particularly in

a commercial market and where research is, as I say, being encouraged and funded by big organisations, some of the checks and balances that would normally have been gone through 20 years ago are being dispensed with, some would say justifiably so. The courts are aware of these risks, particularly in relation to some of the non-peer reviewed material coming from America. I know one or two High Court judges who are extremely dubious about the evidential value of some of this material.

Professor Harry Zeitlin: I started doing medico-legal work invited by the Official Solicitor in 1975 and it began to dawn on me – this is related to what you have been saying – that when a person gave evidence as an expert, they needed at the very least to be able to back up every point that they said. I got every one of my trainees to do a legal case in order to get them to be aware of the need to be able to have a rationale for each explanation, and it works. Many of them are now in very senior posts around the world. So, the idea that the challenge that the legal case gave to saying “Why can you say that?” was excellent for them in their clinical work.

The President: I think this emphasises the benefits of closer collaboration. Lawyers need to spend time with doctors and doctors need to spend time with lawyers and just as I get apprehensive as I open the clinic room door, so I like to think that clinicians are a little bit apprehensive as they enter the door of the court room and see me!

Professor Robert Ferner: You were very encouraging in the belief that doctors make decisions rationally but it is shown that the diagnoses we make during life are substantially wrong in about a quarter of cases. How do the lawyers do?

The President: No better is the short answer to that. We confidently seek to predict the outcome of cases and frequently come up short. There are now computers that are predicting the results of cases and, in a worrying development, even deciding cases. Just as artificial intelligence will come into medicine so inevitably it will find a place in law. I am still waiting to discover whether an appeal from the decision of a computer is to three computers followed by a final appeal to five computers! I don't know but you are right. Lawyers do not do any better because, as I said, I think Sir James Fitzjames Stephen was absolutely right: ultimately, on imperfect materials, the great skill is guessing right.

Professor Rachael Mulheron: Simon, I just want to congratulate you on a brilliant speech traversing the early doctrinal to what we confront now which is AI, as you say, in law and medicine. It covered an enormous amount of ground and thank you very much, it was very illuminating. I was just interested in one comment that you made early in your speech about how

medicine is more of a binary type of analysis whereas law has to inevitably engage in the shade of grey. I wondered what your thoughts were about the causation element of medical negligence because this is when law and medicine collide, is it not? Law is looking for a cause of a patient's injury and there often are numerous causes as, for example, Martin Willsher, super-saturated with oxygen in the first 36 hours of his life, but there were many other reasons why he may have ended with blindness. Do you think that the law has achieved the right balance in causation in a world such as ours where medical science is developing so many possible theorems for causal injury? Are we insisting on too high a threshold in your view given you litigate so many of these cases or do you think the law is right that you have to establish balance of probability as a general rule?

The President: I don't think the balance is right. You and I will remember when cases were all about breach of duty. Now causation is the big battleground and the law is consistently re-inventing itself. You have mentioned the *Willsher* case. *Bailey and Williams v Bermuda* are also more recent "cumulative cause" cases. These are essentially legal constructs designed in some cases to enable decision makers to reach a decision and in other cases to provide a remedy where none previously existed. So, the short answer to your question is no, I don't think the balance is right and I do think that judges will continue to try and find ways to circumvent what I have suggested are the hard binary choices which medicine requires. It is enormously to the credit of the first-instance judge in *Johnson v Williams* that, faced with a whole variety of causes, he simply said, "I'm not satisfied by any of them." I think that that is a mature and responsible way of dealing with a complex and difficult medical causation case rather than striving for an answer that may not be there.

If we may, we will leave it there but thank you to everyone who attended remotely, it is very good to "see" you. Would you, please, if you have the time, get in touch with me or with Evelyn Palmer, our Honorary Legal Secretary, because we would like to have your feedback on the user experience tonight. We have been using for the first time tonight our new cameras and microphones and we would like to know how it was for you. For those of you who are here, you are welcome now to join us for drinks and canapés. We would ask everyone, if they would, to make a voluntary contribution towards this of £10. It makes a huge difference to our finances and enables us to spend our money on things that matter. Anjali Keeping is poised at the back with her card reader to take your money. We take cash as well. Do, please, contribute because it really does make a difference to our finances going forward. Thank you very much and I look forward to seeing you in a few minutes. (*Applause*)

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