Evidence, the Law and the Medical Profession

Lord Dick Taverne

Author: The March of Unreason – Science, Democracy and the New Fundamentalism

A meeting of the Medico-Legal Society was held at the Royal Society of Medicine, 1 Wimpole Street, London W1, on Thursday, 10 November 2005. Dr Neville Davis MBE, was in the Chair.

The President: Welcome to this, the second meeting of our current season. We are very privileged tonight to be addressed by Lord Dick Taverne. Called to the Bar in 1954, he took Silk eleven years later, and by that time he was already Labour Member of Parliament for Lincoln, serving as a Minister in the Home Office and in the Treasury.

In 1972 he resigned the Labour whip and stood as a Democratic Labour candidate for the same seat, which he held, representing that constituency until 1974, and during that period he published The Future of the Left – Lincoln and After.

His own future led him to become a member of the National Committee of the Social Democrat Party between 1981 and 1987 and, with the emergence of the Liberal Democrats, Dick was on the Federal Policy Committee between 1989 and 1990.

But his interests were very wide-ranging and he held several commercial directorships. In addition, he started the Institute for Fiscal Studies and took on Membership of the International Review Body, which was concerned with the workings of the European Commission.

He was made a Life Peer in 1996 and now concentrates on Science and Society. Three years ago he founded Sense About Science and earlier this year he published The March of Unreason – Science, Democracy and the New Fundamentalism.

His talk this evening, entitled Evidence, the Law and the Medical Profession, would seem to go to the very heart of this Society and I have delayed it long enough, so I would ask you, please, to give a very warm welcome to Lord Taverne. (Applause)

Lord Taverne: Well, ladies and gentlemen, I am in a way speaking to you under false pretences because I am not a doctor, I am not a scientist and I no longer class myself as a lawyer. Actually, at university I studied classics, philosophy and ancient history, which is a course that has the great advantage that it teaches you to despise the wealth it prevents you from earning, but to try and remedy that disadvantage I did become a lawyer. However, I only practised at the Bar for about twelve years and I left the Bar in 1966, so I no longer claim to be a lawyer in any way at all.

I want to start by looking somewhat critically at the attitude of the legal profession to evidence, because it is very different from the attitude of science to evidence. I first came across this when as a young barrister I was involved in the fight by Tony Benn to keep his seat in the House of Commons. He suddenly became the Earl of Stansgate, wished to continue in the House of Commons and not go into the Lords, but he was disqualified by succeeding to the peerage. Well, he challenged that and I appeared before the Committee of Privileges in the House of Commons to argue that in fact he was not disqualified because if one looks at it historically there was lots of evidence of peers who later sat in the House of Commons and who were entitled to sit in the House of Commons because they had rejected the Writ of Summons to the House of Lords. Historically, there was no doubt at all on the evidence that that was the basis on which people should not be allowed to sit in the House of Commons. They were disqualified by accepting the Writ of Summons to the Lords. My evidence was completely disregarded because the famous Lord Coke, or Sir Edward Coke – I can’t even remember now whether he was a Lord or not – had pronounced that the three estates were separated because of the doctrine of the blood. Coke was a great authority. So evidence was really rather irrelevant. I noted that the law has regard for
authority as much as for evidence, and you often used to hear people say “Well, of course this is a judgment by Lord Justice Cockell…”, or whoever it was, “a great authority, therefore we must follow him”; and there is a very great difference in the approach to authority between lawyers and scientists.

However, I am also worried about the attitude towards evidence of the medical profession, because quite often the medical profession does seem to show a lack of understanding, certainly as far as the law is concerned, of scientific evidence. I was absolutely horrified at the fact that the Legal Services Commission gave legal aid to a firm of lawyers to sue pharmaceutical companies on the grounds that MMR vaccine caused autism. Now, there wasn’t any such evidence. There was a lot of epidemiological evidence available which in fact suggested that there was no such link, very powerful epidemiological evidence. The Committee on the Safety of Medicines examined it and they too had come to the conclusion that there was no evidence of any link. So instead of saying that there was no prima facie case and therefore legal aid should not be granted, they decided to give legal aid. Some £15 million was spent not because there was a prima facie case but to enable them to find out whether there was a link between the vaccine and autism. Causes of autism have baffled many scientists for a very long time but a team of sixteen lawyers, which did include three people who had some sort of scientific qualification but no-one who had done any research whatsoever, were to find out the causes of autism. They spent £15 million which was paid for in the end by the Health Service and the public.

Now that seemed to me an extraordinary case, and I am sorry to say that recently, after the Legal Services Commission did in the end withdraw the certificate for legal aid because they said that there was no reasonable possibility of the action succeeding, a judge did give more legal aid in another case to study the connection between autism and a vaccine. The judge said refusal of legal aid was a poor advertisement for access to justice.

Again, if one looks at the Alder Hey case, millions have been spent on claims for damages for breach of trust or for wrongful interference with a body or for breach of human rights and negligence, and yet it is a case where, as far as I can see, no damage was suffered by anyone. I mean, feelings were hurt, one doctor behaved extremely badly and others behaved insensitively, though mostly in accordance with common practice at the time. Yet somehow or other we have gone back to the ancient doctrine that bodies should be buried whole. Tissues were treated as if they were arms and legs which had been dismembered and somehow kept away from the body, so it was felt that babies should be buried again for a second time. A huge amount of money has been spent in damages on something which seemed to me to have a very doubtful basis in law, but popular feeling was aroused and it was felt that some sort of legal remedy should be given. An obsession with burying the body whole seems more appropriate to the time when bodies were ferried across the River Styx or Acheron to Hades.

Doctors are sometimes extremely good scientists but many have not been particularly well trained in science. They sometimes seem to show a lack of due regard for evidence and the BMA, that very august body, or, rather, the BMJ, I think it was, that learned representative journal for the medical profession, invited Prince Charles no less to write about medicine – a great authority on medicine, Prince Charles!

The BMA also welcomed the report which was issued recently – it was condemned by all scientists – calling for the integration of complementary medicine into the National Health Service. Now I am not saying that all complementary medicine is bad. On the whole my view of complementary medicine is that of Richard Dawkins, who said that it is the branch of medicine which either refuses to be tested or can’t be tested or, if it is tested, consistently fails tests. But from time to time, of course, some products are found to be useful and then they become part of orthodox medicine. Yet 40% of General Practitioners offer homeopathy or alternative medicine as part of their services. Homeopathy, it seems to me, is essentially the science of pretending that nothing is something. It works as a placebo, but how on earth can it work in any other way except
as a placebo? The dilutions are $10^{30}$, followed by 30 noughts. Nothing of the original substance can possibly be left, and yet it is supposed to work in ways other than as a placebo. It is like turning water into wine without divine intervention.

Now, nobody is denying that the placebo effect can be a perfectly real effect. There is plenty of evidence for that. It works in rather mysterious ways. It has been found when tested that injections work better than pills and, when it comes to pills, blue pills are more effective than red pills, except with Italian men. Germans with ulcers react twice as strongly to the placebo effect as do the rest of the world but not Germans with high blood pressure, who have the lowest response rate. Now, what that goes to show is the importance of double-blind tests because the belief of the doctor is obviously just as important a factor as the belief of the patient.

There has always been a certain tendency for doctors to flirt with witchcraft and when the enlightenment took place and when modern science was born medicine took a very long time before it followed. For a very long time indeed doctors continued to espouse the doctrine of humours. They continued with purges, they continued with blood letting, although there was no evidence to support these practices. In some cases deception is deliberate, and if I may quote George Bernard Shaw in *Misalliance*:

> “Optimistic lies have such an immense therapeutic value that a doctor who cannot tell them convincingly has mistaken his profession.”

The theme of my book is that there is a current tendency in public attitudes towards science to turn back on science and to go instead for a sort of mystical feeling that nature knows best and that we should go back to nature. People say, “Oh, look at the great respect there is for scientists. Every time there is an opinion poll scientists come very high on the list. Scientists and doctors are about the most trusted of the professions”, but if you dig a little deeper you will find that people trust scientists provided that they are not paid by companies and provided they are not paid either directly or indirectly by government. Well, since most scientists are paid either by government or by companies the general trust in scientists fades away. Scientists that are trusted most are the scientists that work for the environmental organisations, like Greenpeace and Friends of the Earth, who are in my view part of the trouble rather than part of the solution. But there has been a general feeling – the New Age phenomenon – that we should turn our back on science, that nature somehow knows best, which is why alternative medicine has growing appeal. It is said we ought to go back to the Middle Ages, because we ought to revere particular remedies or treatments that have been in existence for centuries – steeped in superstition, one might say, rather than hallowed by use over many years. If you look back to the pre-enlightenment days, it was power of prayer which was regarded in the West as the most important part of medicine. St Lucy, for example, was the patron saint of eye diseases, because Lucy was supposed to be very beautiful and legend has it that she plucked out her eyes to avoid the lustful glances of men. St Blaise was the patron saint of throat diseases because he had once saved a child who had a bone stuck in her throat. Today, the power of prayer is again regarded as playing an important part in medicine because faith healers can now be employed on the National Health Service.

It is not just in medicine that there is this tendency of going back to nature. Let me look at the wider picture.

Organic farming is very fashionable. The amount of organic produce in a supermarket grows every year. On the whole I regard it as a great con, but there is a mystical element involved. It was originally based on the teachings of Rudolph Steiner who believed that you should nurture the soil by feeding it with cow horn stuffed with entrails and that you should plant according to the face of the moon. He had many other eccentricities. Now, that is an unfair accusation against organic farmers, who are mostly extremely worthy and admirable people, but the mystical element has not gone away. A House of Lords Committee looked at the question of organic farming and Patrick Holden, the head of the Soil Association, gave evidence. When he was
challenged with the fact that none of the claims made by organic farming have ever been upheld when independently examined he explained that it had certain qualities which science was not yet sufficiently developed to measure. In fact, he was reasserting that there is this mystical element which he saw as one of the virtues of organic farming. But it is, of course, based on nonsense. It is based on the idea that somehow natural chemicals are good and synthetic chemicals are bad. All the synthetic chemicals which are developed into drugs which have quite a useful effect on a number of diseases are disregarded, but natural chemicals are thought to be good, when in fact there are any number of natural chemicals which are extremely harmful, starting with Aflatoxin. Every claim that has been made for organic farming, that it is more nutritious, that it is better for the environment and that it tastes better, when subjected to independent examination or blind tests has been dismissed. The Advertising Standards Association made the Soil Association withdraw its leaflets making such claims because none of the claims had been substantiated. The Food Standards Agency, which has no axe to grind, an independent body which was headed by top class scientists, has looked at it again and again and found there is no evidence whatsoever that organic food is more nutritious than food produced by other means. Of course it is fresh – because it doesn’t have a long shelf life unless it is imported, which 70% of it is – it is fresh, but if compared to other fresh food it has not been shown to taste any better. It is based on a great number of scare stories about pesticide residues in food, although again, as Sir John Krebs said, who was the former head of the Food Standards Agency, one cup of coffee contains more carcinogenic substances that you will ingest from pesticide residues in fruit and vegetables for the rest of the whole of the year. It doesn’t mean to say you stop drinking coffee, it means that the scaremongers disregard the law of Paracelsus that everything depends on the dose.

But there is a culture of fear. It is promoted in the press in all sorts of different ways. It is not only pesticides, it is also electromagnetic rays. Now there is no hard evidence that mobile phones fry your brains, and yet the government set up a special commission to look at it and said “Well, perhaps children shouldn’t use them very frequently”. Only recently another report looked at the whole question and said there was no evidence whatsoever in the first ten years during which mobile phones have been used that they have caused any damage to health. There was recently a Directive called The Physical Agents Directive, a European Directive which came out and which said that one shouldn’t have people near MRI scans because of radiation, and if in fact the Directive is implemented – and we have made representations from Sense About Science to stop it – it means that we can’t use CAT scanners and that people have to have x-rays instead, which are not necessarily very good for them.

Perhaps most seriously, you see the same attitude in respect of genetically modified food and genetically modified crops. We take a very insular view of these in Europe, because they are a huge success story throughout the world. The total number of hectares which are now cultivated with GM crops in the world as a whole is over 80 million, more than three times the whole land mass of the United Kingdom. It has made an enormous difference to small cotton farmers in China, in India, in South Africa, in Brazil, in Mexico. Over 6 million small farmers, not big multinational agro businesses, over 6 million small farmers found their income substantially increased and their health improved. Why? Because genetically modified cotton requires much less spraying with pesticides. Now, of course, when I say pesticides residues never caused harm I was referring to the UK. Of course spraying pesticides in the sort of way in which it was sprayed by a lot of the ill-educated farmers in China did cause a lot of damage to health. Genetically modified organisms, not only can they relieve poverty, they can do a great deal to deal with hunger – the yield is greater. In due course we will be able to grow crops that grow in arid soil or that grow in salty soil, in areas where no crops can be grown today. It can do a great deal to help eliminate some of the scourges of disease in different parts of the world. Golden or orange rice is a very good example. Rice can be genetically modified – and it is very near commercial
production now – to make a substantial contribution towards limiting Vitamin A deficiency, which has a devastating effect on children.

But all this evidence in favour of GM is disregarded by most of the media. It is violently campaigned against by some of the green organisations, like Greenpeace, and when Greenpeace was asked, or at least when its Director was asked in a House of Lords Committee, “Is there any evidence that could change your hostility to GM crops?” the answer was, “No. Our opposition is definite, it is complete and it is unchangeable.” This is not any longer a body which has regard to evidence. This attitude is a form of eco-fundamentalism. What we are seeing at the moment is part of the environmental movement which has acquired the characteristics of a religion rather than a genuine concern for the environment. Michael Crichton, the novelist, gave a rather interesting analogy between the new environmental religion and Judaeo-Christian traditions and myths. He said you start with the pure state of the Eden until the fall came, which was eating of the tree of knowledge, namely science; you have original sin, which is pollution; and you have eventual salvation for the true believers which comes through sustainability.

The question arises, does this matter? I mean, does it matter if some people sell snake oil? Does it matter if we have organic farming? It costs more, it is not value for money, but a lot of people believe in it. Does it matter if people go for placebos? Does it matter if people do go for the separate vaccines? Does it matter if we don’t go for GM crops in the United Kingdom?

Well, first of all, when it comes to medicine, yes, it does matter, because it can be dangerous: if people are so addicted to alternative medicine that they avoid orthodox medicine when they are seriously ill they can suffer very dramatic consequences. There is a Faith Assembly Sect in Indiana which eschews modern medicine altogether and the maternal mortality rate is about the same as it was 100 years ago, and indeed child mortality is about 100 times greater than the rest of the United States.

There are any number of examples. The MMR scare may not lead to a measles epidemic in the United Kingdom, but it has done to some extent in Ireland, where children have died as the result of a measles outbreak which was a direct result of people avoiding the MMR vaccine.

We can afford organic farming in this country; there is nothing particularly wrong with it, but it is also held out as a remedy for the developing world. Since the yield is something like 20 to 50% less than for other forms of farming, let alone genetically modified crops, this is going to cause devastation in the Third World, when we need to feed 3 billion extra people probably in the next 50 years, when something like a billion people are not properly fed now, when standards of living are rising and there are going to be greater demands for more sophisticated food, more meat, and when every projection really suggests that we are going to need something like three times the production of food that we have at the present time, and if you are then going to go for a form of farming which is 20 to 50% less efficient, it will mean more slash and burn, which will be devastating for the environment. It cannot possibly deal with the problem of hunger in the world.

Now, is this all that is wrong with it? I don’t think the seller of snake oil is a harmless crank. I don’t think spreading a message of unreason is something which doesn’t matter very much. I think science and the respect for evidence plays a very important part in democracy. One of the great episodes in the history of mankind was the enlightenment, when you not only had the birth of modern science but you had the birth of liberal democracy. Francis Bacon, as the father of the Royal Society, in fact the father of modern science, was regarded as one of the great heroes by John Locke, who could be in many ways regarded as the founder of modern liberal democracy. Locke specifically said “I am just a labourer in the undergrowth paving the way for the true men and heroes of our time, people like Newton and Hooke”. So the enlightenment was a period when you got the birth of both modern science and liberal democracy, and that was no accident, they were closely linked at that time, and I think they have been linked ever since.
If you reject the approach to evidence which is inherent to science, what defence can you offer against people who are not just harmless sellers of snake oil but the chauvinists and the racists? What answer have you got to the various forms of hysteria that break out? Though some of the food hysterias may not be very important, you get other forms of hysterias – hysterias against asylum seekers, hysterias against paedophiles, for example.

All sorts of irrational hysterias are dangerous to democracy. The Nazi regime was born on hysteria. In fact, the enemies of democracy have also been the enemies of science. In the Soviet Union you had Lysenko who ruled and dogmatically asserted that in fact Lamarckism was to be the dominant doctrine in science. Bourgeois science was to be abolished. You had to have dialectical materialism as a main element of science, no more bourgeois science. The Nazi regime was very hostile to orthodox medicine; it was very keen on homeopathy, very keen on organic farming. Orthodox science was Jewish science that should be banished. Germany took a very long time to recover, because until the Nazis came to power Germany had more Nobel Prizes per head of population than any other country in the world but has had very few since the end of the Nazi regime; it is only just now beginning to recover. It is not an accident that science and democracy have both been the enemy of autocratic regimes, because there is a link, as Popper showed, between science and progress and democracy. Democracy and science both depend on an open society, on open criticism, of being prepared to abandon policies when they are shown to have failed. Because criticism exists, hypotheses are replaced when they are shown to be faulty. It is not an immediate link; day-to-day workings of democracy don’t always seem to be monuments of reason; but nevertheless there is a link which has been shown over the centuries and it is no accident that in fact the most tyrannous regimes in the world are also the most backward regimes.

Prosperity and science have also been linked and one of the worst aspects (my final point) is that if one turns one’s back on science, as in the move back to nature and the view that nature knows best, then you are also turning your back on the belief in progress. Now I don’t think that progress is inevitable; there is no evidence that progress is inevitable; we have had many setbacks over the course of the centuries; but to give up on progress is the most depressing doctrine you could imagine and if we really do not continue to respect evidence and if we undermine the lessons which science has taught us, then the quality of our society as a whole will suffer.

Thank you all. (Applause)

Discussion

The President: I knew we were in for a treat and I wasn’t disappointed. For my part, much of this talk was music to my ears and a breath of fresh air. I know that the doctors have had their fair share of witchcraft in the past, as you have mentioned, but the lawyers too can be incriminated – I am thinking of trial by immersion, for example! Unreason may well be very much on the march, but tonight we have heard a great deal of reason. Lord Taverne has offered to take questions so I am now going to throw it open to the floor.

Mr Brahams: Malcolm Brahams, solicitor. Do you see some parallel in what you have said to the opposition to animal experimentation? Some of it may be rational to some extent, some of it is emotional, but do you also see an echo in the general dismissiveness of science and the approach to science?

Lord Taverne: I think that one of the manifestations of eco-fundamentalism is the very strong objection of some people, which even takes a violent form, towards animal experiments – an end of the anthropocentric view of the world and instead an eco-centric view that animals have as many rights as individuals. Now, talking about rights is always rather difficult because I think rights involve duties which must be enforceable. You can certainly enforce rights against cruelty to animals, but the concept of animal rights does seem to me to be taken rather far by some of the eco-fundamentalists and some of the practices they have gone in for seem to me just as dangerous as those of other terrorists that we face in present society. So, yes, I do think that this irrational
feeling that animals should be in fact preferred to human beings, the non-anthropocentric view of the world which puts animals in a special category, is a manifestation of what I have called eco-fundamentalism.

**Professor Marks:** Vincent Marks. Do you think that the rise of interest in alternative and complementary medicine has anything to do with the rise in certain respects of fundamentalism, a religious fundamentalism suggesting that there is something or other that is greater than human beings and therefore greater than us and science can’t answer it?

**Lord Taverne:** Well, I do think that this is a form of religion. It has all the attributes of religion. The fanaticism with which it is pursued is not unlike that of some of these religious fundamentalists. I am not referring to religion as a whole but to religious fundamentalists. I think that it takes different forms in different places. In the United States there has only recently been the kind of extremism in approach to animal rights that we have suffered from. The Huntingdon Life Sciences Campaign, or, rather, SHAC, has now spread to the United States. I am President of the Research Defence Society and there are many reports that the United States is getting more dangerous for doing certain animal experiments, people have got to be more cautious. But on the whole in the United States the manifestation of fundamentalism is that of evangelicals who preach the literal truth of the Bible, which 40% of United States citizens are supposed to believe in, who campaign for intelligent design to be taught in schools, not quite teaching that the world is flat but certainly challenging all the knowledge we have acquired through Darwin of evolution, so in the United States I think it is much more a religious extremism that is evident. In Europe you don’t get the religious extremism, at least we haven’t yet, but you do get a much stronger degree of eco-fundamentalism, the destroying of crops. You know, the Americans go for abortion clinics, Greenpeace goes for crops and you get that kind of parallel. So I do think that in that sense there is a link in that they are different manifestations of a similar phenomenon. The cause and effect between the two I wouldn’t like to speculate on.

**Dr Moffatt:** Robin Moffatt. I am a retired GP, Lord Taverne. During 30 years in general practice I think the most appalling scourge I saw was the addiction to tobacco, which you haven’t mentioned tonight. Why did it take so long for the report from Bradford Hills and Richard Doll to take effect? I mean, I know the tobacco industry was opposed to their initial proposition, but it does seem to me a terrible thing that we were not able to persuade our lawyers, our government, and so on, to do something about it. It looks as though something is now being done. Could you go into that for us?

**Lord Taverne:** I don’t think I have got any answer. It is very difficult to change deeply ingrained habits. On the whole I think people are beginning to be aware now that it is not a good idea that they should drive lots of SUVS (Support Utility Vehicles), which are gas guzzlers, that we ought to limit the use of the motor car somehow if we are to be concerned about the quality of the environment, but when the government raises the petrol tax there are massive demonstrations and there is no evidence whatsoever that car drivers are willing to change their habits, although they may well realise that some of these habits should perhaps change. It takes a very long time. I mean, people don’t necessarily do what appears to be in their own interests. Young people taking up smoking tobacco feel “Well, who worries about what happens to you when you are 65?” and they get addicted and then it is very difficult to break the addiction. Okay, tobacco smoking is being reduced, but drug addiction of other kinds is on the increase. People know it doesn’t do them any good. I don’t think we quite know what makes for these habits. I don’t know why the new religion has spread so fast, this back to nature fad. Why is there this terrific fashion for alternative medicine? Well, it is just a fashion. Fashions grow and they are irrational things and you can’t predict how they are going to develop. So I think my answer is I just don’t know why certain cults or habits take so long time to fade when it is so clearly in people’s own interests that they should.
Dr John Taylor: John Taylor, orthopaedic surgeon. The difficulty is that lawyers – I am speaking of judges but also those who run DSS Tribunals – ask medics questions or for decisions which aren’t amenable to controlled trials. I mean, it is a long subject, but if I can just give you a simple example. 95% of people who have whiplash injuries when their car has been struck from behind will be recovered within two years, but a proportion go on with neck pain, some because maybe the influence of compensation affects them and others because they have a genuine disorder, psychological or organic. Now, what are we to do? The judge or the assessor wants the medic to say for how long on the balance of probabilities the symptoms are attributable to the accident. If we have someone who uses their neck a lot like a bus driver, who is always looking over his shoulders, and at three years he is still saying “But this accident has given me intolerable pain and I am off work” we know that there is only a 5% or less chance on the balance of probabilities scientifically that that is due to his accident, so we are reduced to a hunch. We look at his eyes and see whether we think we like him and if we are authoritative and successfully able to convince the court, then the judge may grant him the award or the big award that he feels is appropriate, but I think my problem is, and the question I ask you is, how can the law do any better with its expert witnesses than it does?

Lord Taverne: Well, I am not sure that it can. I think one has got to be very careful about expert witnesses. One of the fascinating books I have read was Science on Trial by the editor of the New England Journal of Medicine, which is a fascinating story about silicone breast implants and how millions of damages were recovered by plaintiffs because some expert witness would explain that silicone was not an inert substance but was likely to cause the most terrible disease effects. It was absolute nonsense. Finally, the United States courts, as I understand it, did come to a sensible conclusion, which was that in future they would nominate the experts. You wouldn’t have rival experts because a jury wouldn’t be able to choose between the two of them. The experts will still be uncertain about some effects and the judge will just have to make up his mind, or in America, of course, it would be a jury and they would have to make up their minds as best they could on the available evidence. But the uncertainty of forecasts is a very difficult thing not only for judges but for the public to appreciate. Risk is something the public doesn’t understand. Risk is a very difficult thing to be a guide to policy. Look at BSE: everyone says “How terrible” and part of the reason why I think there is this anti-science reaction which is often quoted is that people say “Look, they told us BSE was safe”. Actually they didn’t. What happened with BSE is that the scientists, who didn’t fully understand the role of prions, so I gather – people are not necessarily all that clear about it at the moment – said, “Well, we think it is probably scrapie. We don’t quite know but we don’t think it is likely to transmit to human beings. The risk is small.” Well, they were ridiculed, but it turns out that it probably was a good guess because if you look at the number of cases of CJD, variant CJD, they are very small. So popular imagination is, “Here were the scientists saying something was safe and something terrible happened.” Well, it was awful for the people involved but it wasn’t a major medical problem to the population as a whole. The politicians perhaps over-egged the pudding. Poor old John Gummer is always ridiculed because he fed his daughter a hamburger. Well, he was trying to reassure against a panic. I mean, some of the government statisticians were saying “We are likely to find 50,000/60,000 deaths; a massive epidemic is going to spread.” Well, John Gummer was told the risk was very small so he decided to set an example. You get ridiculed if you set an example by feeding your child a hamburger, you get ridiculed if you refuse to reveal, on the grounds of keeping privacy, whether your baby has had the MMR jab, so you can’t win as a politician. So I wouldn’t blame John Gummer either. I think the whole of the BSE thing wasn’t well handled and there clearly was a conflict, as the Phillips’ report showed, inside the Ministry of Agriculture, because it was both responsible for the industry and for food safety, but it wasn’t actually the worst scandal that has ever hit us and it is seen as such. So how do you weigh up
these risks? How does a judge do it? I think a judge makes the best of a difficult job. I think it depends on the judge. So I don’t think there is an answer to your problem.

**Dr Hewitt:** Penelope Hewitt. I am a member of the medical profession, with the specialty of anaesthesia. My father did scientific research on medicine from a science degree, whereas I am a practitioner, and this helped to tell us, I think, the difference between having to get on with the job despite not having full evidence versus someone who was really looking at the evidence, but I have the feeling that nowadays, sort of 50 years on from when my father was doing his most important research, in this country we are probably not spending as much as we should do on really fundamental research rather than small profits/quick returns kind of applied research, because we are relatively very well off now and we could probably afford to be spending more on open-ended research that will lead us to more in the future. I wonder what your views are on that.

**Lord Taverne:** Well, I wouldn’t really claim to be an expert on how much research we should be doing. The area which I have looked at most closely is that of agricultural research and biotechnology and I think what is sad is that the amount of publicly funded research has declined, at least in northern countries, in the United States and in Europe. If one looks at the wonderful results obtained by the “green revolution”, Norman Borlaug, well that was publicly funded research. They bred new kinds of rice which were able to grow much better and give a much higher yield, and it saved hundreds of millions of lives. That was publicly funded research. Why is biotechnology unpopular in Europe? I think it is changing now because most of the research is soon going to be done in China and India. It is not going to be done in the United States any more, but so far most of the research has been research financed by companies. Well, what do companies look at? They look at crops which are likely to yield a considerable profit, so they are crops for the rich countries. Sadly, the first genetically modified crops were herbicides and herbicide tolerant crops. Well, there wasn’t much advantage to that and people said, “Oh, that will mean you are going to spray herbicides more freely.” Had they gone for pest-resistant crops I think there might have been more understanding that this would mean a reduced use of pesticides. But the crops they developed weren’t at that stage crops for the developing world, so any sort of moral advantage from these crops didn’t appear. It was only when golden rice appeared, or, rather, when golden rice looked like something that could be developed that people started saying “Well, these crops perhaps are going to be good for the developing world” and it is only really gradually that in China and India and now Africa crops are being developed which are staple crops which have been genetically modified and so you are going to see a big difference. Initially I think we did suffer from the fact that most of the research done in this field was corporate research, and the same is true for just about every other research too; so much of it is corporate, when there is great virtue still in publicly funded research, and also it is more open. I mean, the whole concentration on getting your patent in as quickly as possible when it comes to corporate research seems to work against the openness of science and to some extent hold things back. If one looks at the Human Genome Project, it was the Wellcome that financed the British end of it, and that forced Craig Ventnor to be more open than he would have been otherwise. In fact, they lost $750 million of investors’ money because they thought they were going to have the patents all sealed up and thanks to the Wellcome it was open research available to everybody. So there is a great deal to be said for public research and I wish that a higher proportion of it was public, but exactly how much there should be I don’t know, and it is one of the facts of life that we are having to look to the companies.

**Dr Harris:** Andrew Harris, a public health doctor and lawyer. Thank you, Dick, for a wonderfully sweeping talk giving us great vision over many disciplines. A while back Lord Woolf gave a talk which I think was titled something like “The undue deference of the law to doctors”, and I think underlying his thesis was that actually lawyers don’t understand a lot of medical practice and science and in general are easily persuaded by what is put before them by the medical profession, and cases do seem to suggest this, and indeed looked at by a lay person a
great injustice must be seen to be done in the fact that many cases can’t get to trial and those that do fail because of problems of causation, or whatever. Isn’t there, therefore, a possibility that actually the public view this as a great conspiracy between the professions and that actually what is needed is a look again at our adversarial legal system so that for cases which question science we should have some learning perhaps from the Continent whereby inquisitorial methods of weighing up evidence provided in an independent way rather than by the medical practitioner might be considered by a suitably empanelled and informed legal tribunal?

Lord Taverne: I think there is a certain respect for authority, which includes medical authority as well as authority of judges. I think it was originally mentioned that I might refer to the Roy Meadow case. I think that was a case where he was an eminent man and people deferred to him although quite a lot of his views were questionable. I also think he has been very unjustly treated and made a scapegoat and people who looked at the Sally Clark case more carefully than I have done say that there were a lot of other grounds on which the jury proceeded and it wasn’t just Roy Meadow that persuaded the jury to bring in a verdict of guilty. So I think that is a case of perhaps excessive respect for authority and I certainly think it is true that often lawyers have difficulty with complicated science cases, and certainly I think juries have difficulty with them and I don’t recommend the American system of having juries on patent cases. But should you approach the whole proceedings differently? I think I am too far removed from practice. I gave up practice in 1966; that is why I don’t call myself a lawyer; the law has changed completely since then. I did read a report the other day of people who had looked into it who actually came to the conclusion that the adversarial system was quite a good one.

Also interesting (just to change completely) is the fact that I have been much concerned recently with the whole argument about climate change and there is a feeling that there is perhaps too much deference and consensus about what is thought to be a consensus view of climate change and that what one ought to have is perhaps something more akin to a court proceedings whereby those who challenge the conventional wisdom put their case and those who support it put their case and then you have a panel which decides which of the two makes the more convincing story, which suggests the adversarial system may be a better way of resolving certain scientific problems. It is quite interesting that this has just been put forward to a House of Lords Committee.

So I am not any longer persuaded that the, say, French style of the inquisitorial system is better at getting at a fair result than our adversarial one. But, yes, I think that outsiders sometimes have difficulties with the intricacies of science and one can give many examples of where one doesn’t quite know what certain results are and how evidence should be weighed.

Dr Mansell: Martin Mansell. I am a doctor and I hope I have a scientific approach to it. I agreed with everything that you have said but I didn’t find it depressing at all, which perhaps I should have done, because I think that it is only when you get a tremendous conflict between these two camps, the fundamentalists and the rationalists, if you like, that things will grow and things will develop. You mentioned Germany and Russia, and, I mean, their scientific advances in the last decades have been rubbish, they haven’t produced anything, and you used the word “dialectic” and I think that is what I am getting at, that it is only when you have a crucible of these two opposites of ideas that progress is actually made. So, what you and your committee are doing, I regard it as tiresome work, it is time-consuming, it is money-consuming, but I do think it needs to be done and I suspect that “progress” is probably better for it.

Lord Taverne: Well, I think the essence of democratic progress and of progress in science is open discussion and questioning and therefore opposite viewpoints being considered. I think the problem about the conflict with the fundamentalists is that they don’t argue, they are not interested in argument, and unfortunately they seem to be winning in many respects: they have driven agro-business out of the United Kingdom, out of Europe. Only in Spain are genetically modified crops grown. All the agro-businesses have now withdrawn. Plant science, research in
which we were very eminent, and certainly genetic modification is more or less going out of this country, and that is because the fundamentalists want it. So I don’t relish that crash when in fact their influence still seems to be growing. Maybe we will turn the corner, and I think it does require that scientists speak out much more than they have done, and part of the aims of *Sense About Science* is to get scientists to take a much more active part in discussions of issues, which many of them are now doing.

On the question of Germany and Russia, well I think German science is recovering now; a lot of it is of very high quality. It is still the aftermath of the fact that it was suppressed. They were very good at rocket technology, so were the Russians; I mean, anything which helped the military effort was being promoted; but the rest of science suffered grievously.

**Ms Lynch:** Selina Lynch. I am a lawyer. Don’t you think that a lot of the problem, particularly with the lawyers, is in finding out the quality of the evidence and of mistaking it sometimes for opinions, or, rather, mistaking opinions for evidence?

**Lord Taverne:** Yes, and I think that good lawyers will test the quality and bad ones won’t. I wouldn’t blame lawyers for not always understanding science; I mean, some science may be very intricate. I have now been looking at science more carefully but I am afraid that all the technical aspects of it tend to escape me. I look at the sort of broad results and the overall effect and certainly I have been looking in some detail at what genetic modification means so that I can answer the arguments of those who say it is inherently dangerous and you are playing god with nature, or arguments of that sort. But I wouldn’t blame lawyers for sometimes not being able to understand abstruse science. Good lawyers will make a very good job of it.

**Ms Lynch:** Well, I don’t think the question is not understanding it. I am simply saying that they have no way, neither the skill nor the resource, for finding out whether the evidence is good evidence and sometimes for resolving differing viewpoints and differing opinions based on what may be faulty evidence, that it could be a *house of cards*. So it is all very well talking about the need to base things on evidence, but if the evidence itself is faulty, then you have built it on a house of cards.

**Lord Taverne:** Well, I think that one should be able to see whether a particular piece of evidence has been subjected to peer research and how it stands up against the criticism which others have made of it. So I wouldn’t have thought that there was necessarily something which couldn’t be tested. I mean, if you take claims made for organic farming, they have been tested, and they have been tested very convincingly and found wanting. Again I am looking at the field which I am most familiar with, genetically modified food: the question as to whether or not any harm has been caused or whether it is likely to cause harm to human health has been examined by all the national academies of science. They have put the top people who are most expert in their field to look at it and they have all come back with the pretty clear conclusion that there is no evidence of harm to human health. So that is something which can be tested. Now, there may be difficult patent claims where technical issues arise which are difficult to resolve in a court, I don’t know, I have never been a patent lawyer, but I should have thought in principle there is no reason why scientific evidence shouldn’t be properly tested in a court.

**Dr Bradley:** John Bradley. I am a psychiatrist, so I would be on the medical side, although I suppose people might still think of me as some sort of witch doctor. I take a rather pessimistic view of human nature, unlike Dr Mansell over there who perhaps is rather more optimistic about it. I think that people need their sort of opiates, whether it is drugs, alcohol, nicotine, fundamentalism, political or religious, or whatever, all those things, and I just wondered whether you had a more benign prescription than these sort of opiates that you mentioned.

**Lord Taverne:** No, but I think that, although they may feel they need it if they are dependent on tobacco, it is quite useful to point out that tobacco is harmful and indeed smoke is an unpleasant habit for people in the presence of smokers. Drug addicts do tend to play not a very
benign role in society, with 60% of crime being drug-related, so one wants to do whatever one can do either to prevent or to treat drug addicts.

Dr Bradley: But it is the other opiates that worry me perhaps even more. I mean, I suppose what you are saying really is that the only way is a kind of rational education.

Lord Taverne: Well, I think so. I think that mankind feels a sort of need for certain irrational expressions. I mean, there seems to be a natural need for religion, for example.

Dr Bradley: “The opiate of the masses”, I think, as somebody once remarked.

Lord Taverne: Somebody once called it “The opiate of the masses”, indeed. But people do seem to need some sort of spiritual explanation of things. I can understand, you know, why people also go for homeopathy, because a homeopathic doctor can give people a lot of time and will not say to them “I am sorry, there is nothing I can do”, because no alternative practitioner ever says that there is no answer to a patient’s complaints, so they give them a lot of time, they give them a lot of sympathy and tender loving care, as I understand it, which is a very important part of medical treatment.

Dr Bradley: This is why psychoanalysts are important as well. I am not one.

Lord Taverne: No. So, yes, I can understand these irrational feelings, but I do think that civilisation has been the history of the gradual suppression of superstition and the substitution of reason. That is how I see the march of civilisation. All right, it doesn't only consist of science, civilisations need the arts, music, all sorts of other things, but science is a very, very important part of it and I do see this as a very gradual struggle to reduce the area which is governed by superstition and to increase the area which is governed by reason and respect for evidence. That is how I see the gradual march of civilisation.

Dr Wilkes: Michael Wilkes; I chair the Ethics Committee of the BMA. I am interested in the thesis about the link between the respect for good evidence and, you know, democratic stability, and that is probably very persuasive, but of course it brings into the equation the slightly less successful character in the popularity stakes, which is the politician, who is somewhat less successful in the popularity stakes than the doctors and scientists, I am afraid, but it seems to me that that brings in a new kind of dynamic, and two quick examples of that. Following Alder Hey, which you mentioned, we were told by the then Secretary of State, Alan Milburn, on an almost daily basis, that we were going to be absolutely horrified by the report on Alder Hey, so when it came out we were all duly horrified. Two weeks later the Transplant Service rang him up and said the organ donation pool had disappeared because people weren’t giving their organs any more, which I thought was a bit pagan – immediate U-turn; you know, fulsome words from Milburn about transplants, sort of trying to rescue his job, but that seems to me to be an area where common sense and evidence base was thrown out the window in pursuit of political expediency, and we have had this again just in the last couple of days when the Health Authority appears to have made a perfectly rational decision not to give a cancer drug and has now been told to make a political decision to change its mind, and the Editor of the Lancet this morning seems to be, I think, quite persuasive that the Health Authority was right. So I suppose the question is how can we make politicians more evidence based? (Laughter)

Lord Taverne: Just as I think there is this uphill battle against superstition and the unreasoning elements of life – I think was it Swift who said something about “Mankind is as well adapted to reasoning as to flying” – so obviously politicians are not necessarily at first sight the best example of the link between democracy and reason or democracy and evidence, and I think that the Alder Hey episode was appalling. I mean, here was Alan Milburn saying it was the most shocking thing he had ever heard of. I can think of an awful lot of more shocking things and I am not terribly shocked by Alder Hey, but there we are. Politicians react unreasonably all the time, there is no question about that. What are elections but a whole series of sound bites. Well, sound bites are not exactly manifestations of reason. I remember, you know, as a politician I had to go round canvassing and persuading somebody on the doorstep in about two sentences why they
should vote for me and what my whole political philosophy was. It was an exercise of mind-bending superficiality. The political process is not on the face of it an exercise in reason, and yet on the whole I don’t think politicians are too bad a tribe of people. We see them through the eyes of the press which tells us all politicians are liars. My own experience of Parliament (and this applies to all parties) is that by and large politicians are no worse than anybody else and actually they are often rather better than most people because they occasionally have to take very tough decisions. Ordinary people may never have to face difficult decisions, but at some stage as an MP you may have to say “No”. I know that there was a famous Congressman in America who voted for every decision to cut taxes and every decision to increase expenditure. I mean, there are those, but on the whole politicians at some stage have to say “No” and certainly people in government have to take some very tough decisions. People always say politicians don’t listen to the public. Of course they know what the public is thinking but they have to ignore it. I mean, they often go rather bravely against majority views. Most politicians – you may not share my view – vote against the death penalty. There is overwhelming public support for the death penalty. They vote against it. Why? Because they (a) think it is wrong, (b) they think that it leads to miscarriages of justice which can’t be rectified, (c) because there is no evidence to show that the death penalty decreases the murder rate. They come to a rational decision, and rather bravely. If you look at the electoral process by and large people judge it on some sort of evidence; you know, “Has this government made schooling better, improved health or not?”, some sort of evidential verdict. Sometimes they vote on entirely emotional grounds, on immigration, or something of that kind, but by and large it is not that unreasonable. Politicians compromise. When policies don’t work they tend to give them up. So, in the end, even that much maligned tribe of politicians who are supposed to be all liars and time servers and people only interested in sound bites do come to quite reasonable conclusions. I mean, on the basis of those I have met, I have got quite a high regard for American Congressmen. Now, American politics on the face of it is a plutocracy, not a democracy, because it depends how much money you have got when you are going to run for President, and yet I read in a book recently a statement by a person who had spent a lot of time in Washington who thought most American politicians do what they say they are going to do, don’t mislead or try not to mislead and are reasonably honest people. So even politicians are not necessarily quite as irrational as the public believes them to be, but the electoral process is certainly not on the face it much of an advertisement for reason.

The President: One last question.

Mr John Verdin Davies: John Davies, lawyer. I think Lord Taverne may have done something tonight to raise the image of politicians, certainly for me. (Laughter) This has been very interesting and I think we have seen how both the legal and the medical professions have suffered to some extent from their own history in the process of trying to struggle upwards towards the light, and the law certainly still has too many resemblances to the old trial by battle. If you go into a court and there are lawyers on either side engaged in demolishing each other, that is not always the best way to arrive at the truth. But I would like to ask about a specific thing you have already mentioned, sir, and that is that progress is sometimes delayed by the terrific secrecy that surrounds research, and especially in the field of pharmaceuticals, and the excuse that is always given for this, of course, is that “Research is very expensive, so we must be able to hold on to the intellectual property that is gained from research, and therefore we need the secrecy”. So is it time, sir, for a re-examination of the fundamental issue here, which is that really science needs to be open?

Lord Taverne: Well, can I answer the general part first about lawyers. I feel about lawyers rather in the way in which I have just expressed myself about politicians. It is very easy to abuse them but there is quite a lot to be said for the law. Now I wasn’t in love with the law and when I ceased to be a Minister I didn’t go back to the law because I found a lot of other things more interesting and challenging, but what has always struck me is that the general effect of the legal
training is to make people interested in certain rules of justice and of rights, and this is a wonderful thing. Even in the Soviet Union at the worst times of the dictatorship one still found that Soviet lawyers were suggesting that people should know the charges which are made against them and that they should abide by certain precedents, because lawyers throughout the world, as it were, tend to be told that they must have some regard for rules of justice and on the whole they do promote justice, they are concerned with justice and it is the lawyers who are raising the concerns about Guantanamo Bay, and the doctors as well. So I think that there is something about the legal profession which does make them play a very, very important part in the development of democracy.

Now, can we do something about secrecy? Well, again it is not my field and I don’t speak with any expertise and people who know about patents will be able to answer your question must better than I can, but I think there is a feeling that patent law has become too restrictive, and in particular when it comes to the patenting of some of the discoveries in connection with the human genome, that this is restricting further research and no longer a necessary protection of investment. I mean, obviously, you can’t have a new drug sold at the prices at which it had been made generically, because it costs, whatever it is, £900 million to develop any drug and takes twelve years. Well, you can’t then suddenly have it open to competition by generic producers. So a patent law is essential for the development of science, but it does seem to have become rather restrictive and I do think that there is a case for looking at it, and I believe some people are doing it, and certainly the TRIPS agreement, the Treaty on International Patents, I think, is a very restrictive document and should be re-examined. It works entirely in favour of the developed world and works very much against the developing countries, and countries like India are going to find that their production of generic drugs may be severely harmed by the fact that they are subscribing to TRIPS, and they are notable producers of generic drugs. So, yes, I think that we should be concerned about the restrictions and secrecy imposed by patent law, although it is necessary. So I think it has probably been overdone.

The President: Well, I have to bring this fascinating interplay to an end. It has been a wonderful evening, Lord Taverne. We are very grateful to you for such a stimulating and informative and commonsense contribution. Please accept a very small gift on our behalf.

Lord Taverne: Oh, thank you very much.