VIDEO INTERVIEW TRANSCRIPT

Lord, Philip: transcript of a video interview (21-Jul-2016)

**Interviewer:** Adam Wilkinson  
**Transcriber:** Debra Gee  
**Editor:** Tilli Tansey  
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**Note:** Video interviews are conducted following standard oral history methodology, and have received ethical approval (reference QMREC 0642). Video interview transcripts are edited only for clarity and factual accuracy. Related material has been deposited in the Wellcome Library.

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**Biography:** Mr Philip Lord MSc CMath FRSA (b. 1945) studied mathematics at Reading and London Universities, and also has a teaching certificate from the University of Sussex. He was a member of the MRC Air Pollution Unit's scientific staff between 1968 and 1978, after a brief spell teaching. In the MRC, he undertook research applying mathematics and computer techniques to the study of lung function, lung morphology, and respiratory flow dynamics. The research involved him in the development of techniques for the automation of lung function measurement. He went on to a post as Technical Manager for medical publishing at Elsevier Science Publishers in Amsterdam, where he later became closely involved in the development of new technologies for scientific publishing. Here he became Vice Chairman of the ISO and NISO committees, which determined the format standards for CD-ROM (ISO9660). In 1991 he joined the pharmaceuticals industry, first at SmithKline Beecham and then GlaxoSmithKline, in which companies he led projects for managing large-scale regulatory documentation and for archiving scientific data. As a leader in the developing science of digital archiving, he set up his own digital archiving consultancy in 2002, and worked internationally to promote best practice. He is now semi-retired, but still teaches digital archiving at the University of Dundee. He was elected a Fellow of the Royal Society of Arts (FRSA) in recognition of his contribution to archiving digital information.

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[1]. **BECOMING A SCIENTIST: THE APPEAL OF MATHS & PHYSICS**

How did I become a scientist? I feel it's always been in me, in a sense. I was speaking earlier about an experience as a child which sticks in my memory which is being down Rye Lane with my mother as, I don't know, five- or six-year-old, one evening and looking up into the sky and seeing the moon and the stars and thinking to myself, 'What's going on up there? I wonder what that's all about? Does it end?' That kind of question came to mind.

I discovered later I was pretty good at Maths. This is when I joined the technical school for watch making and instrument making. I did a test and I got something like 99% or something like this, and thought, 'Oh, that's good.' [Laughs]. And then later, when the school had been moved into the comprehensive system, I remember the teacher, the maths teacher, standing up and giving a first lesson on Euclidian geometry. From the start, I was absolutely bowled over by this. He started off with three or four axioms, very simple things, and he put a huge super structure, a logical structure, on top of it and it caught my imagination. But again, at that point I was in a rather notorious, rather rough, comprehensive school and there was no way I could take that on professionally and it never even occurred to me. I left that school thinking I was going to be an instrument maker, maybe I was making surgical tools or something or maybe if things worked out well I might become a metallurgist. It was not until I started studying, doing my A levels that I realised that, 'Ah, yes, well maybe there's a university career at the end of this.' I've always been interested in fundamentals. Where does the universe end? What's happening between the Planck constant and the size of quarks, 24 orders of something, orders of magnitude? There's something going on there which we don't understand. Why are there only four fundamental forces in nature? That kind of question always fascinated me. And basically, I did better at mathematics in the examinations than I did at physics and that led me to concentrate on mathematics and get interested in it. And that's what I applied for when I went to university.

* Interview conducted by Mr Adam Wilkinson, for the History of Modern Biomedicine Research Group, 21 July 2016, in the School of History, Queen Mary University of London. Transcribed by Mrs Debra Gee, and edited by Professor Tilli Tansey.
Quite frankly, I think I would have been a better physicist, or theoretical physicist, than a mathematician, and I’ve never considered myself a statistician. It’s just something I’ve had to do as part of the job, as it were. I don’t find it’s really fundamental, well it does have some interesting aspects to it but no, I never really. I am still a Member of the Royal Statistical Society, but it doesn’t really grab me and I really don’t want to know about all this technical stuff. Just a little rider to this, my son is Professor of Applied Mathematics at Heriot Watt University and I look at him and I thought, ‘No, it’s not quite right. He should be Professor of Pure Mathematics and doing the real stuff, looking at the fundamental theory of numbers or whatever it might be.’

[2]. ACHIEVEMENTS & INFLUENCES

I think, what would I consider my greatest achievement? That’s an interesting word, whether it’s achievement or whether you mean success, or thing which has given me the most fulfilment. Hm. It depends on where I am in my career. For me it was a great achievement to get my A levels because I hadn’t come from a scholastic background expected to get that. And then the next one might be the offer of actually going to university, and my mother actually pushed me in, ‘You’ve got to accept this offer,’ and I knew at the time that I should not have accepted the offer and I should have waited a year and perhaps gone into Imperial College rather than Reading University, and I’d have been much more prepared. I think there’s also been a certain amount of luck involved, such as getting into the MRC, as a happenstance; the job was there and I fitted it. So, achievement? It’s perhaps the IT work I did at the Medical Research Council rather than the actual science. My involvement in the CD-ROM business, when I was in publishing, because I had quite a large influence in the way on which medical information was delivered on that medium and the software issues around that. Then I had quite a large impact I think on the pharmaceuticals industry on records management and the way that’s handled. I was perhaps not key but I was an influence in that; I was very much at the centre of the arguments.

So these advanced products that we were looking at, at Elsevier for example, I’m quite proud of some of those. And perhaps even more so my influence on the digital preservation issue, where I did become something of an expert in the EU context, what’s going on in the run up to 2000, and working there, moving that onwards, and the big science data work in the 2000s, with Tony Hay and others. So these are sort of the professional successes, which have given me a lot of pride. Then there are some other things, of course, making and selling some musical instruments, which is something I want to get back to in my retirement. When I was working at the MRC, as I said in the audio tape, in the evenings I would come back, go up to my spare bedroom and make lutes and psalteries and other musical instruments. And I actually sold some of these and when I left the MRC I had this point of trifurcation I suppose you would call it: was I going to take over my parents’ book shop and run that up in Hexham? Was I going to become a musical instrument maker, plucked musical instruments, which I could well have done? Or was I going to accept the job in Amsterdam with Elsevier, in medical publisher. I’m afraid the high life won out and I went to Amsterdam.

[3]. THE MRC AIR POLLUTION UNIT

We had a good time at the MRC, rather relaxed and rather free in the way it operated. There are some nice stories about the place. We set up stall in Guildhall or some similar organisation, with spirometers and posters and so forth, and the Lord Mayor came to open this and came around and visited various booths. And he came to our booth and I offered to, I think it was a peak flow meter for him to blow into just to show what we were doing. And he gave this feeble puff into this machine, quite clearly he had some problem with his lungs. And quite clearly he was a smoker because of his stained fingers. I may have got him to do a repeat or do another test, and I said to him, ‘You’ve got to go and see the doctor,’ which he took on board. Whether he did anything about it I have no idea but that’s the only time I’ve met the Lord Mayor of London. I have no idea what the chap’s name is now. I have a good picture of him in my head but very interesting.

Pat Lawther was a bit of a showman and he had this habit, at staff meetings, we’d have these occasional staff meetings and he’d hustle in, carrying a bottle of something or some kind of substance. And I remember two occasions in particular: one is he came in with a little glass jar, plonked it in the middle of the table in
the library where we were all sitting, and said, 'That's pure nicotine.' I don't know where he got it from and it may not even have been true. He said, 'There's enough nicotine in there to poison the whole of London.' Of course we were talking about smoking and the effects of smoking. And another occasion he brought in another rather larger pot of rock, crystalline rock, put that on the table and said, ‘That's crocidolite.’ Asbestos. So, he would stimulate the argument by bringing in these samples and putting them on the tables.

There was another occasion when I was working late and Professor Lawther was also in the office. I was working at the time with a microscope. He bustled in with a slide, ‘Have a look at this. What do you think? What is it?’ And it turned out he’d taken a sample of his urine and he was worried that he had kidney stones and there were crystals in there and he wanted me to have a look at it.

While I was working at the MRC, I came very close to Margaret Thatcher once. That’s when she was Minister of Education. There was a bit of a mystery attached to this, because I think the film’s gone missing. I think the Ministry made a film of the work of the Unit to promote science in the UK, and we were a convenient multi-disciplinary site she knew that they could use. So we had these people in for a while and they filmed us doing various bits and pieces, and we went off to the Ministry I suppose, or somewhere in central London, to see the film, along with Margaret Thatcher, presumably whose department had organised this. So that was another brush with the great and I'm not sure about good, but certainly with the great.

[4]. SETBACKS

Lots went wrong, and I speak more generally than just working at the MRC and subsequently. I'm one of those people who failed the 11+, just I think. I took it again and I failed again. Then I fluffed my first degree, got a third and that was another blow, intellectual blow for various reasons because at the time I was more interested in politics, sex and music and so forth.

There was a certain amount of disillusionment at the end of my time with the MRC, which had a lot of personal stuff at the back of it, and also because the Unit wasn't going anywhere at the end. It was time to get out. Looking at it from the professional level, there were lots of things I would like to have done but we really didn’t have the computing power in those days to actually do it. The storage capacity or the sheer cycles per second in the machine to do it. For example, to do any medical imaging to any real depth or sensibly do that kind of work, I was immensely interested in that at the time, that couldn't really be taken forward. More generally, I don't think I've had, looking at the science again, I don't think I've had any great impact on science as such in terms of scientific discovery or mathematical discovery. Maybe around the periphery with these things I've done with the pharmaceuticals industry, archiving of scientific information, the management of big data and all of that, but not, there's no big discovery there that I discovered this enzyme does such and such, whatever it might be. So I think that probably, at the sort of professional level, covers it. I think as a kid I would have been really made up if I'd made some great discovery in mathematics or nuclear physics, or I'd unified gravity with electromagnetism and the other forces. That sort of grand synthesis stuff would have really satisfied me, or made a contribution to that.

[5]. CHANGES IN TECHNOLOGY & CHANGES IN WORKING PATTERNS

There’ve been huge technical changes because, particularly in IT, there are things which are so easy to do now which you just couldn't do in the past. In fact, that’s just reminded me that I got immensely interested in programming languages at the MRC and the development of ALGOL 68, which is a side issue that I followed up at the time but I couldn’t do anything more with it at the time. So huge changes in technologies which makes things so much easier now, opens up so much, many more possibilities. Against that I think our working practices have got so, almost to the point of being unproductive. When I was at the MRC I was left alone, I was given general direction ‘Study this, look at that,’ and one got on with it and did it. And I think you explored and you were thinking all the time and I think that was immense, that freedom was immensely valuable to me and I think it was productive. And I saw that also when I joined Elsevier, which again is a completely different context because it’s a commercial context. But it was a pretty relaxed working environment and there were jokes and you sat down and talked over the coffee and so forth as I had done
in the MRC with Brian Biles. We used to spend an hour every morning swapping stories and ruminating over the news and all of this, and then we got on with whatever we did.

One of the things I really enjoyed about working at the MRC was the relationships with other people, particularly Brian Biles, John Ellison and Robert Waller as well. Because there was a relaxed feeling in the organisation and you could, you once spent time talking about other things other than work. But of course work always crept into it and you were picking up ideas and thoughts all the time. Brian Biles and I used to wait for the coffee to come in, and then we’d eye up the girls in the lab, the lab technicians, and we’d discuss last night’s television and talk about sort of dirty stories and so forth. And then I’d spend time with the librarian, which led into my next job because of the work I did with her, and so forth. And so all of that was very productive and spilled over again when I went into Elsevier where it was a very unusual organisation but very, very relaxed, particularly in the early years. There were so many different cultures there, all working together. There was a wonderful chap that was the receptionist in Elsevier’s building. Some gay, black guy, he was brought up in Richmond in Surrey, but moved out to the Netherlands because it was so relaxed there. And we spent hours together chatting about this and that, but it was also productive. I had a man working for me for example who was into fly fishing. He was a Dutch champion fly fisherman, used to go up on the top of the building and practice casting flies in the afternoon.

And all of that paradoxically was productive. Towards the end of my time in Elsevier the culture had come in, of course we’re now approaching the 1990s where you worked long hours. If you came back from the States you came directly from the airport into the office, rather than, you know, spending the day off and recovering the jet lag. And I suspect people work longer hours nowadays with less productivity. And I think that’s one of the big changes.

[6] FUTURE HOPES & FEARS

A difficult question and it works on two levels: one is what I think in terms of science and the science agenda, and then more generally in the political and wider social sphere. And the wider sphere first, because I think it’s probably easier to answer. I wanted to see environmental concerns in the widest sense come at the heart of policies and processes, I want to see a fairer society which also enables individual empowerment. This has been central to my political opinions throughout my career, my life. We must get a grip on global warming. There are a number of issues we need to get a grip on. Global warming, what’s been called the Sixth Extinction, which is the great extinction of species at the moment; population growth and these environmental concerns. And I think there’s going to be an economic storm coming. We’re going to have to weather that without descending into conflict. And the reach of, this is very topical so we’re talking just post-Brexit, with cooperation, integration, and adjust ourselves to a low growth environment because I think it’s inevitable. So I want to see a lower, slower, quieter, more cooperative society develop if that’s possible. And there’s also a personal bit about this. I explained earlier that I play 17th century, 18th century music on the lute, a very quiet instrument and a very contemplative one. But as soon as I start listening to this stuff I’m taken to another place and that’s where I want this place to be in the future. It’s quiet and contemplative. But if you look at science, I think there are some big issues that need to be looked at. I’ve already talked, looking at medicine, it’s the conquering of environmental disease, obesity, elimination of these modern diseases, and overcoming drug resistance because I think there’s a big crunch coming on drug resistance and that’s going to hurt.

Beyond that I think there’s some very big scientific issues like the unification of the four fundamental forces, which has not yet taken place, because we’ve got to bring gravity into it. Bring IT under more human control because I think there’s a danger that IT is going to start ruling us, rather than the reverse. We start hearing warnings about this from people as eminent as Hawkings and others. I think they’ve got a point, they’ve got a point, and it needs to be done. I would add to that we also need to bring genomics under human control, and genomics should not rule us, we should rule genomics and the use of genomics. That’s another big danger that we might sleepwalk into a dangerous situation. That probably sums it up.

[END OF TRANSCRIPT]
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