

AUDIO INTERVIEW TRANSCRIPT

## Dubowitz, Victor: transcript of an audio interview (27-Sep-2016)

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**Date of publication:** 03-Apr-2017

**Date and place of interview:** 27-Sep-2016; Queen Mary University of London

**Publisher:** Queen Mary University of London

**Collection:** History of Modern Biomedicine Interviews (Digital Collection)

**Reference:** e2017110

**Number of pages:** 22

**DOI:** 10.17636/01022366

**Acknowledgments:** The project management of Mr Adam Wilkinson and the technical support of Mr Alan Yabsley are gratefully acknowledged. The History of Modern Biomedicine Research Group is funded by the Wellcome Trust, which is a registered charity (no. 210183). The current interview has been funded by the Wellcome Trust Strategic Award entitled “Makers of modern biomedicine: testimonies and legacy” (2012-2017; awarded to Professor Tili Tansey).

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**Citation:** Tansey E M (intvr); Tansey E M (ed) (2017) *Dubowitz, Victor: transcript of an audio interview (27-Sep-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2017110. London: Queen Mary University of London.

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**Note:** Audio interviews are conducted following standard oral history methodology, and have received ethical approval (reference QMREC 0642). Related material has been deposited in the Wellcome Library.

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## Dubowitz, Victor: transcript of an audio interview (25-Apr-2016)\*

**Biography:** Professor Victor Dubowitz BSc MB ChB MD PhD FRCP FRCPCH (b. 1931) graduated in medicine in Cape Town (1954), followed by residencies in medicine and surgery at Groote Schuur Hospital. He came to the UK in 1956 for 18 months to get broad clinical experience, exposure to culture, and planned to return to general practice in South Africa. A three-week locum at Queen Mary's Hospital for Children (Carshalton, Surrey) exposed him to two wards with muscular dystrophy patients. Having come for three weeks he stayed for three years, initially as a Senior House Officer for a year, which he combined with doing muscle biopsies and then got interested in doing research and contacted Professor Everson (Tony) Pearse at Hammersmith Hospital, a pathologist with a special interest in enzyme histochemistry. He embarked on a study of enzyme histochemistry of normal and dystrophic muscle, completing an MD Thesis in 1960. He realized his heart was really in clinical medicine and paediatrics and successfully applied for a paediatric lectureship in Sheffield where he spent the next 13 years, becoming Reader in Child Health and Developmental Neurology, setting up a muscle unit and a basic research group and completing a PhD on the histochemistry of developing and diseased muscle. In 1973 he applied for the newly established Chair of Paediatrics and Neonatal Medicine at Hammersmith, and moved a large research group with him, ultimately creating the Jerry Lewis Muscle Research Labs, funded by the American MDA, on a hospital roof. He rapidly established an internationally recognized paediatric centre for Muscle Disease of clinicians and basic scientists, with a primary emphasis on the clinical management of patients and their long-term follow-up. In 1990 he established the multidisciplinary journal *Neuromuscular Disorders* of which he remains Editor-in-Chief. In 1995 he founded the World Muscle Society, which aimed primarily at providing a forum for young researchers to present their work. Elected foundation President, he was re-elected every three years until the present (2017). Professor Dubowitz published his autobiography (*Ramblings of a Peripatetic Paediatrician*) in 2005.

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**TT:** Tilli Tansey

VD: Victor Dubowitz

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**TT:** Let's start with why did you become a doctor? Was there science, was there medicine in your background?

VD: Well, there was nothing in the background and, I think, it was purely chance, because I was interested in science at school and I was very interested in mathematics - it was one of my favourite subjects - and so it was a toss-up initially, was I going to do something like chemical engineering or was I going to do something like mathematics? And an additional option somehow was going into medicine. And then, eventually, I got a place for chemical engineering and for medicine, I didn't apply for mathematics. And then more or less spun a coin and said, 'No, I think I'm going into medicine.' So it was just a choice at the time. There was

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\* Interview conducted by Professor Tilli Tansey, for the History of Modern Biomedicine Research Group, 27 September 2016, in the School of History, Queen Mary University of London. Transcribed by Mrs Debra Gee, and edited by Professor Tilli Tansey.

nobody in the family at all, apart from one distant uncle, my mother's brother, but that hadn't inspired me; he was in general practice for a long time.

**TT: What schooling did you have in South Africa? What was your school like? Where do you come from in South Africa?**

VD: I come from a small country town called Beaufort West, which nobody had heard of until Chris Barnard, the cardiac surgeon, said he came from there as well, so he put it on the map. It was a very integrated schooling system. Initially, actually, the first two years of what you probably now call kindergarten school, there was a Catholic school run by some nuns for pre-school and they were very good, actually, and they gave a good infant education, called 'sub B' in those days. I then went to the ordinary school, there was a boys' school and a girls' school separately, and then there was the high school, and that's where I matriculated. And, basically, we had very good basic teachers who were quite interesting tutors, in a sense. Although it was a small country town, I think they gave us quite a good education.

**TT: And you already had an inclination towards the sciences, towards mathematics and the sciences?**

VD: Yes, I think I liked science. I enjoyed history, but I had no head for history, and it was just too many facts, and I was more into mathematics or chemistry or sciences, and this thing.

**TT: You went to the University of Cape Town to do medicine?**

VD: Yes, that's right. What actually happened in the matriculation, unexpectedly, there was a close friend of mine and myself who grew up together and were four days apart in age, and we were always chasing each other academically in a way. And we got onto the merit list for the Cape Province, that's all the matriculation, a few thousand, and we were number three and number four. He was three and I was four, and I believe there was one point between us. And basically this gave me a very nice scholarship to Cape Town of £50. And £50 in those days was a good start, and also having had quite a good pass I got in, because medicine was very restricted, about 100 people in the first year and so on. And then once I had got in there I was somehow still interested in science, and in second year of medicine there was the option of doing a BSc, intercalated, and so I went for that and there were only three of us actually doing it, so it was quite nice. But we lost our friends in their regular year and then joined the next year, a year later. And that gave me some experimental things I was actually trying to produce. I got interested in hemochromatosis or something to do with iron, and so tried to produce it in rats by making them diabetic and then feeding them iron, trying to look at it. This thing.

**TT: And you'd already got an experimental bug as well?**

VD: Yes, I think so.

**TT: And when you qualified, where did you do house jobs?**

VD: In Cape Town, yes. I qualified in 1954 and did two house jobs, the standard surgery and medicine, six months each. And then I met up with a friend who qualified with me, I was on a boat trip around the coast, you know, we used to go Cape Town, Durban and back. And he was in Port Elizabeth and he said, 'How about going to England?' So I said, 'Well, that's a good idea.' And so I then went and did two months of general practice in my home town, as a locum, saved a bit of money for the fare and booked my ticket coming up the east coast, six weeks' trip, all the way to England, for the same price as the direct one, but it was a nice holiday. And then I looked for him at Port Elizabeth and he wasn't there, and he'd changed his mind and decided he was going to do another job. And so that was actually my first experience, and then I came to England in April, I think it was, of 1954 into a pea-souper of a fog, and you couldn't see anything, and I nearly got onto the next boat back.

**TT: That must have been an awful shock after South Africa?**

VD: It was unbelievable. And so there it was. And then it's very interesting because people were very negative, and I thought I wanted to see a bit of the world, I wanted to be in London, I wanted to get some general experience, so I was looking for casualty posts. And people said, 'Ooh, you'll never get jobs in London.' Too competitive and all that. And so then I went around enquiring and I stayed at William Goodenough House, which had a lot of postgraduates, met up with some other South Africans, and went down to the Royal Free Hospital in Gray's Inn, spoke to the casualty guys there and they said, 'Well, you can put in, but I don't think there's much chance.' And then what we had to do in those days, there was the British Postgraduate Medical Federation, which actually controlled the postgraduate institutes and stuff, and there was Sir Frances Fraser, he was the Dean or whatever, and it was customary for colonials to go and meet up with him and then one's chiefs would send him confidential reports because we had the open report which said, 'This is the best thing since brown bread,' and this thing, but the real warts and all came directly from your chief. And so I went to see him and just told him I'm interested in general practice and wouldn't mind doing a bit of casualty and various things, and he said, 'Yes, that's alright, but what do you want to specialise in?' I said, 'No, I don't want to specialise.' So he said, 'What did you come here for?' I said, 'I came for a bit of culture and theatre and that thing.' So I was too honest, you see. And so he said, 'I've got to put you down for something. Do you want surgery or medicine?' So I said, 'Okay, put surgery.'

And then of course he said, 'What job? Hold on, you're looking for some casualty or general things.' He said, 'Let me have a look. There's something up in Sunderland at the moment and there's something down in South Wales.' So I said, 'No, no, I actually would like to stay in London. I've come here for the culture.' And so he said, 'Well, let's see what we can find.' And then he said, 'Hold on a moment, they're looking for a casualty officer in Lewisham.' He said, 'That's not too far from London. You can get a train into Charing Cross.' So I went for an interview at Lewisham and I got the job, you see, partly because the previous casualty officer had been a South African guy who actually became a cardiac surgeon later. And he'd obviously left a reasonable impression there. We were keen on doing casualty to get experience. The other casualty officer was an English graduate, and he wouldn't touch anything; he was scared of litigation or something, and so anything orthopaedic he passed on. And I was there setting fractures, and playing around, and doing minor surgery and so on. So that was extremely helpful. And then, of course, you never know your luck, because I always tell people, it's very important to do what you enjoy doing, it's always been a principle, and then always have a go at things. And then one day out the blue the superintendent called me into the hospital and said, 'We've got a problem, because we've got an ophthalmologist and urologist that do sessions here, and they've got a houseman, and they've said they'd rather have no houseman at all than have this guy. He's a bit of a danger to patients. And would you be prepared to help out?' I said, 'Sure.'

So then I did an ophthalmology fill-in. This ophthalmologist would come along and he'd operate and so on, and it was some amazing experiences, because for instance at Guy Fawkes [Bonfire Night 5th November] there was a kid who put a cracker into the fire, and it didn't go off, and then he went down to look and it blasted both his eyes, and he was totally blinded, and his corneas were totally opaque. And I thought, 'Goodness, that's tough.' Anyway by giving him 10-minutely drops and saline and steroid or something, eventually he walked out with normal eyes. So you know, of importance to me as a result of being friendly with this ophthalmologist, he said, 'What do you want to do next?' I said, 'I wouldn't mind doing a medicine job.' He said, 'Hold on, I'll check what's going on at Northend Hospital in North London, Hampstead, because I do sessions there as well.' So he came back the following week and said, 'They're advertising a job in about a week's time.' I put in for it, and I came along there and a whole corridor full of people and they all looked a lot more senior. Anyway, I got the job unexpectedly, and why did I get it? Partly because Bill Hoffenberg had been the Registrar then.

**TT: The South African connection.**

VD: Yes, an ex-South African [laughs]. And he had been my Registrar in Cape Town. Not that he gave them any reference for me, but they obviously liked the accent or whatever it was. And so the rest is more or less history. Well actually it's not quite that easy, because then I wanted to do some paediatrics, and I'd actually applied for various sorts of things that I was looking at. And then I had a call out the blue, there was a chap

at George's Hospital who arranged locums for residents and this thing. And I put myself on his list, because the Guy's people used to come to Lewisham. And then out of the blue one day he phoned me and said, 'Can you help out?' This was in 1957. 'There's a Registrar at Queen Mary's Hospital for Children in Carshalton, and he's going up to some youth festival in Moscow or something,' which turned out to be an international festival, and they were looking for a locum. Oh yes, I wanted it in paediatrics. So I went out to Queen Mary's, met up with this guy and I mean it was an old army barracks, there were 600 beds or something, and there was tuberculosis and polio and herpes and all sorts of things. And then he said, 'There's also a muscular dystrophy ward, but you don't need to worry about that because if a child has pneumonia, they will call you.' I'd never heard of muscular dystrophy, never seen a case. So the following morning of course I went to the dystrophy ward. And, as they say, the rest is history. I went for three weeks and I stayed for three years. I became interested in muscular dystrophy.

**TT: But by this time you'd had, you'd done a wide variety of surgical jobs, got quite a lot of experience. And then specialised surgery, and then the medical jobs.**

VD: And this polarised me, but then it also set me off at a tangent, because nobody seemed to know anything about this muscular dystrophy. Nobody was interested in these kids, and the paediatrician said and the neurologist said, 'There's nothing we can do, so we're not really interested.' And then I learnt a bit about pathology so I asked, 'Who is the best pathologist around here?' This was Professor Daniel, who was the neuropathologist at the Maudsley.

**TT: Peter Daniel?**

VD: Peter Daniel, yes.

**TT: I knew Peter so well.**

VD: I see. Anyway, there we go. It's a small world, you see.

**TT: Peter is largely responsible for me becoming an historian.**

VD: He's responsible for me becoming a pathologist almost. I went out to Peter Daniel, and he was very nice to me. I took biopsies from the children and I took them to Kings College and he processed them and then we looked at them together and he taught me about the pathology, and so I got very interested. And in the meantime the pathologist at Queen Mary's, who thought he knew about everything in pathology, biochemistry, he called me one day at lunch - because they used to come and eat in the residents' lounge - and he said, 'Look here, man, I just need to talk to you, you know. What are you dabbling in, all these sorts of things? Keep your fingers out of the pathology. That's my domain,' or something like. So I said, 'Well, I'm just doing whatever I like doing.' And he said, 'Well, that's fatal you know. You can't possibly do that.' I said, 'I'm single, I've got no responsibilities. I'm not bothered actually if I die young, that type of thing, and that's what I'd like to do.' So anyway that's what I did and then I asked Peter Daniel about some advice about doing some research, and he put me onto Everson Pearse at the Hammersmith. And so I phoned Everson Pearse and said, 'I know nothing about histochemistry, but Peter Daniel thought it might be a good idea to come and talk to you. And I'd like to do some research and I'm interested in muscle disease.'

So he said, 'Would you like to come to lunch on Friday?' So there I went for lunch with all these big dignitaries, you know like McMichael and all the big names of the time. And this was at the Hammersmith. And here I'm a Senior House Officer [SHO] coming from Queen Mary's Carshalton out in the sticks. So, anyway, Pearse took me around his lab and introduced me, one guy from South America, one guy from here, one guy from there, and a very nice Polish guy working on newts and he was cutting limbs off newts and grafting them onto the tail to see what development happened. So it was very interesting, very exciting. And he said, 'There's a bit of bench space there. When can you start?' I said, 'Tomorrow.' He said, 'Okay.' So then I took biopsies at Queen Mary's and I took them to the lab and I soon realised during the day there was only one cryostat, so I came at night, and I sat there cutting my things and learning about histochemistry

and so on. And I went on with this for about two years and was thinking, 'Well, I could make a career of this and go into pathology and so on.' And then a few things happened, sidelines, but the main chance was, I was discussing what to do next and then Pearse said, 'Go and talk to John Cumming,' and he was the biochemist and mainly a lipid brain chemist. So I went to chat to him and he was also at the time Chairman of the Muscular Dystrophy Group Research Committee, and so he asked what I was interested in and I said, 'Well, do you know I don't know exactly where I'm going, but I'm enjoying this, enjoying that, I've done some histochemistry and I've got a paper into *Nature*.'

So he said, 'Well, if you're interested in a lectureship here, I've just got a vacancy in chemical pathology.' So I was looking at cerebrospinal fluid samples and doing all the biopsies at Queen's Square. And then I got a bit fed up, because these eminent neurologists would send a form with the muscle biopsy and the most erudite of clinical details, it would say, 'Query muscle.' [Laughter]. So I'd then write back and say, 'This is indeed muscle. I'm sure it's not liver or kidney. Can you tell me something about the patient?' you see. And it went on, and then I realised that my heart was really in clinical medicine.

**TT: And actually the patients?**

VD: And seeing the patients. And I missed them.

**TT: Can we go back a little, Victor. What has struck me so far is how generous some people were. Sir Francis Fraser, Peter Daniel, all generous with their time to a young chap who has just arrived...**

VD: Who speaks with a foreign accent, yes. They were very supportive and very helpful. But the best is yet to come, you see. So basically they all were open and you know trying to encourage me, and I've done that ever since with young people, you know?

**TT: Yes, a very good role model. So can we go back, you're taking biopsies... What biopsies did you take?**

VD: I took from the gastrocnemius mainly just under local anaesthetic or sedatives, and then I take these biopsies, and then I'd freeze them. And I probably took them to the lab and freeze them there, whatever. We didn't use liquid nitrogen initially, froze them with CO<sub>2</sub>, you know the gas? And then I found it was full of artefacts, and so discussed this with Pearse and he said, 'Well, it needs more rapid freezing.' And so we introduced liquid nitrogen as rapid freezing, which hadn't been used at that time, and then we got beautiful sections.

**TT: And what were you looking for? Enzyme histochemistry?**

VD: Enzyme histochemistry. And then I looked at muscle and there was a nice checker board pattern in human muscles, and the physiologists were, of course, talking about slow and fast, and white and red, fibres. And so I said, 'Well, I can't see anything white or red here, and I can't tell if it's fast or slow here, but I can tell you there are some fibres that are strong and some are weak reacting.' And then what we observed, it was quite useful as a product, that I had David Hill next door, a physiologist. And so I used to chat to him quite a lot and he said, 'Ah, human muscle, man. What happens in the frog sartorius...' [laughter]. That was days of the frog Sartorius [muscle], so I couldn't talk frog sartorius with them. But, anyway, I then started doing a bit of comparative things, and I looked at the breast muscle of the pigeon and the breast muscle of the chicken, which is white - the pigeon's is red - for long distance maintenance, and various animal studies, and histochemistry. And then I learnt quite a lot about development of muscle and so on. But the important thing we noticed from the dystrophy muscle first - which was obvious - was these very big fibres were one type, but there was a reciprocity between oxidative enzymes and glycolytic enzymes in individual fibres.

So this meant it was meaningful, that actually different fibres with different function within a mixed muscle. So we got a paper into *Nature* and, you know, reciprocal activity, a one page paper, which took about a month to write. If I'd written six pages it would have taken one evening. So, anyway, that was a milestone for me. And then we then published a comparative study, so I looked at all these animals, looked at fish and

frog and then the slow type of muscles, different animals. But then, and we also actually had a first example of a muscle disease, where histochemistry was very important. At Queen's Square they were examining a patient with central core disease, which was diagnosed on the basis of a trichrome stain, so the centre part was slightly different staining, and they weren't sure whether it was more concentrated or less. So we did the histochemistry, and I can still remember that day, because I looked down the microscope and wow! There were holes in the muscle, cores devoid of enzyme. And all the fibres were uniformly one enzyme type, so they were all Type 1. So we knew the fibre types are important and, number two, that it can pick up activity, oxidative activity, and it's absent in these cores. And they were also deficient in phosphorylase and other things.

**TT: What enzyme were you staining for?**

VD: We were using, well it was some general ones, there was succinic dehydrogenase (SDH) that was standard, and then there was NADH-TR or whatever the nicotinamide thing was called, which was a more general one. And then we also looked at other oxidatives, lactic dehydrogenase and a few others. And then we eventually realised they were all parallel, and we could just do one or two and that was enough. So SDH became a standard, and then of course cytochrome oxidase became a standard, so all these things eventually evolved. So that became very important in relation to people believing, and even David Hill said, 'Yes, I think there's something there.'

**TT: It must have been such an exciting time, when you think, because Huxley was looking at nerve muscle fibres...**

VD: Yes. And Krebs was ex-Sheffield originally and so...

**TT: Well, we're getting ahead a bit. All of this stuff about the glycolysis and muscle enzymes, it must have been so exciting.**

VD: I was learning a new language all the time, you know, and I was learning to communicate with these guys because when I came there, NADHT or whatever, diaphorases and you know, what the hell's this language they are talking? But you know when these guys started communicating, then of course I made great friends with people, because the guy, Niwelinski, was a zoologist, I went to visit him subsequently in Poland, and then we also had an experience once. So I came one morning, and the biopsies I had had thawed out, and if you refreeze them they get a lot of artefact. What had happened, the machine had failed or something. And then Niwelinski came to me and he said, 'You know, I had a phone call last night while I was working at the lab, and the machine was making a noise.' We called the machine "Wheezy" because it was very temperamental. 'And I switched it off in order to..., and I forgot to switch it on.' And everything melted inside, and I was leaving all my specimens there for storage, you see. So he was terribly sorry and every time I used to meet him subsequently he used to say, 'I'm terribly sorry.' And so, anyway, we became very good friends, and so it was basically a very nice team, it was very good. And Pearse had an ability to encourage young people. He'd say, 'Get on with it and this is what you do,' and so I was thrown in the deep end. But then I thought, 'No, I'm not really a pathologist at heart, and I really would like to go back to children.'

So I spoke to David Lawson, who was the chief paediatrician at St Mary's. In those days there was one superintendent physician. There was one superintendent nurse and there was one hospital secretary and they ran a very efficient hospital, 600 beds, and everybody was friendly and interactive. And so I spoke to David Lawson and I said, 'I'd like to get back to paediatrics.' He said, 'What I suggest is go and see Alan Moncrieff.' And Alan Moncrieff was the first Professor at Great Ormond Street, of Child Health. And that was when the Institute of Child Health was developed. Lawson said, 'Let me just warn you: he's very abrupt, he's seemingly very rude. If you get 10 minutes with him you've done pretty well, don't feel discouraged. Of course, he's always in a hurry and he's always got a lot to do.' So, anyway, I phoned his secretary, I made an appointment. David Lawson also phoned and he said that I was coming to see him. And so I went to see him, and he interviewed me and said, 'What are you doing? What's this? What's that?' And I, in the

meantime, also wrote an MD Thesis in six weeks or eight weeks or something, and that was a different story. He suggested I should apply for the Lecturer post in Child Health in Sheffield.

**TT: You submitted that through Cape Town?**

VD: Yes, that's right. So what happened was actually, in the midst of all of this, I met a girl on a picnic, which you read about in the book, and I helped a friend of mine who was taking her out for the day and then his car broke down. He had an old Riley. He phoned me up, 'Can you help?' I said, 'Oh yes, it would be a pleasure to take her out. I'll chauffeur you.' Virginia Water and Windsor Park. Anyway 10 days later we got engaged. So it was, and so we had a long partnership. And then we went on honeymoon to St Ives and so on, and then we were discussing meeting up, her mother was in Australia, my parents were in South Africa, and although my father had come out for our wedding, we decided we would try and visit. And then I thought, 'Well, a good excuse for getting there is to present an MD Thesis,' and at that time I hadn't written anything down. So, anyway, we got down to it, and my wife was very systematic with things. She said, 'No, get this, get this, get this. We need all these family trees up.' I had 60 patients that I had seen altogether.

**TT: Was Lilly already a doctor by then?**

VD: Yes, yes, she was going to be an endocrinologist. She was sent out by the Professor of Obstetrics to train in endocrinology with Russell Fraser at the Hammersmith. And then she was going back to a new Department of Endocrinology, obstetric endocrinology. And, anyway, then her course changed a bit as well, and that's a different story. But anyway, so we thought perhaps if we do this Thesis, we'd have an excuse. And so in about six weeks, I contacted Cape Town and they said, 'That's fine for graduation in November/December. It's got to be in by the end of August.' I said, 'Fine.' And this, we got married 10th July, so we got back from honeymoon in the middle of July, which left us just the six weeks, so we just got on with it. In the meantime, I was still working in Queen's Square. So there we go. So that went through and, basically, I went to see Moncrieff you see, and why I told you about the MD Thesis was, it became relevant. So he started talking about this and that, and 'What do you want to do, and what do you think of this, are you interested in that?' And he said, you know, 'Actually have you applied for the lectureship to be in Sheffield?' And I said, 'No, because it said you need a Membership.' Okay. And I thought I'm not eligible. And he said, 'You've just done an MD Thesis.' He said, 'That's just as good as a Membership, I think. I think you should put in.' And the closing date was that day, that Friday, so I put in. Of course Illingworth being Illingworth, on Saturday morning he gets my application, on Monday I get a reply, 'Come for an interview on Wednesday.' And the rest is history, as they say.

Of course, I went up and they were looking for somebody to replace Rendell Short who was going off, but obviously Moncrieff was interviewing me, because he spent about three quarters of an hour. And I thought, 'What the hell am I still doing here? This guy's supposed to get rid of me.' And so he phoned up Illingworth and said, 'You know I've just seen this guy and I think he might fit your lecturer post.' And so I came along and they said, 'When can you start?' or something. And I remember Illingworth saying to me, with the committee there, 'You will be getting the Membership, won't you?' So I said, 'Yes.' Of course in those days there was a 7% pass rate out of 300.

**TT: It certainly was quite a trauma doing the Membership.**

VD: I did the adult Membership and I had one or two goes and didn't get anywhere because I had patients, and then, or I just didn't know all the stuff. And then I had a go when everything went fine with the papers and things, and then I had interesting cases and interesting short cases. And then I got the next letter, which was the pathology viva, in those days. You either got a thick letter or a thin letter. A thin letter you hardly bothered to open it. I went to the pathology viva and they asked me all sorts of questions and I remember a picture of a girl with anorexia nervosa, and I knew all about that, and so on. Anyway, so then I got another letter, thick one, for the final viva and in those days there were 25-30 people getting a final viva. So I read through the whole of the textbook of medicine in the course of that week, and I was in a terrible state, worked up, came down from Sheffield. And you get shown into this big room with the President there and



the censors, and I'm sitting there petrified and the chief censor says, 'No questions.' And the President said, 'There are no questions.' So I sat there and he said, 'You can go now.' So is said, 'But I came for my final viva.' He said, 'You've passed.'

**TT: I've never heard of that for anybody.**

VD: Yes, so I scored enough bonus points not to need any questions in the final viva. I'd passed. So I was going to write to the College, but I didn't - perhaps I should have - because they send you a letter at each stage and if you don't get an initial pass, it's a thin letter, 'We're really sorry to inform you that you've not done well enough in the papers,' or whatever, to justify a further thing. And then if you go through the Path viva and you get a final viva, but if you don't get a final viva it's another thin letter they say, 'Sorry, you haven't reached the appropriate level for a final viva.' But then you get the thick one which says, 'Can you come for a final viva at the College on this and that date,' and it doesn't tell you anything more. And so I thought I'd write to them that if they are calling you for a final viva and they're not going to viva you, they should have at least the courtesy to say, 'Don't worry about it, because however badly you do you've already passed.'

**TT: Well, I've had a number of people sitting in that chair telling me about Membership exams and I've never heard that story.**

VD: Well, that's right. I was going to put it into my memoirs, but then I thought, 'We're already overloaded.' But people now wouldn't understand it, because Membership now is 30-40% pass, it's like an ordinary exam. Then it was a knock out competition. It was a major hurdle.

**TT: Going back to you first going to Hammersmith and Tony Pearse, with him saying, 'Well, this is your bench space.' How did you do that? Because nowadays you'd have to apply and have a grant and pass security and all that stuff.**

VD: The world has changed. If I came here to the UK now I'd probably have gone back into general practice because they would have told me, 'Look, you've got to do this, and seven years of this and five years of that.' Britain was a wonderful place, because they somehow always accepted the eccentric or the deviant or the whatever; they liked the maverick, or whatever you call it. And as long as you didn't have too much of an English accent. Now I'll tell you a side story. Basically, I was very worried initially with a South African accent. They didn't mind South Africans, as long as you didn't speak Geordie or Birmingham or whatever. And I was back in Cape Town on one occasion and a very close friend of mine, who shared digs with me in first year, he became professor of paediatric surgery. He was having a farewell for some visiting Americans or something and there was a guy there, who was a surgeon, his father had been a plastic surgeon, he was a general surgeon. And he was David Davies. He's a proper name, so I've got to be careful what I say. Anyway and he was very posh English, upper crust, and talking with a, you know, Oxford accent. And he's telling people there at this party how discriminative they are in Britain, and he was out there and trying to get jobs and couldn't get jobs, and he couldn't do this, and he says, 'There's a terrible amount of prejudice in England.' And I said, 'You know, David, I think you're absolutely right. I found exactly the same. Tremendous prejudice in England against the English.' [Laughter].

**TT: It's just fascinating to modern youngsters that you turned up and Pearse just said, 'There's a bench, get on with it.'**

VD: Well, I just had a few simple principles, you see. So when this pathologist told me it's disastrous for you to dabble, I'm just interested in doing what I enjoy doing. And that's it. And you were able to do it in those days. And people took you, you know, if they thought, 'Well, this guy's reliable, he wants to do something and I'm sure we can depend on him,' then it's okay. And it was just me as a Lecturer in Sheffield and one Houseman. I had no Registrar. So if he couldn't do something, I had to go in and help him. And then of course, Rendle-Short was interested in cardiology, he'd been there for many years. There were two of them, Holt and Rendle-Short, and there were no Consultant posts coming up. And there was one post coming up there, Senior Lecturer, and they gave it to Holt and Rendle-Short was stuck. And he'd set up a weekly session

of paediatric catheter work for cardiology at the Northern General Hospital, and he used to go there and do the children's catheters. But I came along there and I was told this was also what he did, so I thought, 'This is very interesting, I know nothing about cardiology. I might as well learn a bit of cardiology.' So I did cardiac catheters every Tuesday. Cardiac catheters on all the kids there. I did about 400. I've still got a box with all my detailed reports, and it was great fun because you clinically make a diagnosis and then you find it's something different. But it was early days of cardiac surgery, and all that sort of thing. And I felt I couldn't let that go when the guy had established it, and it was something which was beneficial to the paediatric work, so I just carried on doing that. Much as in Lewisham I did a locum in dermatology and I did a locum in obstetrics. I was on call for obstetrics for about six weeks when they were short of someone, because I was just interested in getting experience.

**TT: A vast portfolio. You would be regarded nowadays as being dangerously unfocused.**

VD: Yes, so there you go. But you know it's just the principle: just enjoy yourself. Well, people used to ask me, 'What are you specialised in? Or what are you accredited in?' I said, 'Nothing.' [Laughs].

**TT: So when you got to Sheffield, Ronald Illingworth was Professor?**

VD: Professor Illingworth, yes. So I came as Lecturer, and then I was Lecturer plus a Houseman and equivalent I suppose to a Senior Registrar, in a sense, but having a little bit more autonomy and independence, because Illingworth took people on trust. And there was John Lorber then who was doing all the spina bifida work and there was Holt who was doing all the cerebral palsy. And then I got interested in muscles, and started a muscle clinic and that sort of thing. And then I went for a year to the States. I was going to work with a chap called David Clarke who was a general paediatric neurologist who had quite a lot of English people going to work with him, and I'd fixed this up with him at the Johns Hopkins. And then about a month or two before he wrote to me and said he was leaving Johns Hopkins, there was some politics or something, he was going to Lexington Kentucky, and if I wanted to come out to Lexington Kentucky, I was very welcome to join him.

On the other hand if I wanted to stay at Johns Hopkins, Menkes was taking over his work and Menkes was an authority of lipid disease of the brain and so on. And so I thought, 'Well, I don't really want to veer into that,' and so I took up my fall-back option which was going to the Muscle Institute in New York for a year.

**TT: At Cornell?**

VD: At Cornell, which was linked with Cornell Institute and Hospital, so I had an outpatient clinic, some position of Visiting Consultant to outpatients or something.

**TT: You were allowed to see patients?**

VD: Yes, yes. I did biopsies on patients, and I taught the residents, and then I got interested in orthopaedic people, and there was the hospital for special surgery next door. It used to be called the Hospital for the Lame and the Ruptured or something. Anyway, they were doing, they were treating congenital scoliosis and so I started to combine meetings with them. That was very useful in getting them to do some spinal fixations. So, basically, even now you couldn't, of course they'd say you're not specialised in that area. But that was a very good year actually.

**TT: Again, going back, how did you organise that because now, again, you'd have to have a grant, you'd have to have permission to take leave. How did you do that?**

VD: I got a sabbatical from Sheffield. I was entitled to that after five-six years, whatever, and I don't think I got a salary, because another South African came and did a locum in my place. And then he became Professor in Liverpool subsequently. So I was away for a year. Well, in those days the BTA [Been to America] was a very important degree for most people. Now, of course, they do their five year training and they're totally

introspective and their horizons are about 200ft. It's a different world you see. But this was nice for me and a lot of people did this year of research in the States and it was really very good because you learnt a different thing and of course American medicine is different and so, there's one side story I'll tell you in a minute about American medicine. But that's how it worked. So you know you did what you wanted to do and within reason. You needed Medical Defence Union cover just in case.

**TT: So coming back to Sheffield you still had very much a focus on muscular dystrophy?**

VD: I was focusing on muscular dystrophy but I did a general outpatients in general paediatrics, and I got interested in the newborns who were having fits, and there was somebody - a biochemist - who was measuring levels of anti-epileptic drugs. And so I took anything on board that was going, just to expand my knowledge of paediatrics.

**TT: And what was Lilly doing at this time?**

VD: Now that's a different story. So here we're now off to Sheffield, and here's Lilly who was going to be at the Hammersmith. In fact her Professor, the Head of Obstetrics, came to visit her some months before, and he met her, met me, and said how much he was looking forward to her coming back and getting established, and she said, 'This is my husband, he's doing pathology.' And he said, 'Well, we'll find him a technician job or something and I'm sure there won't be any difficulty.' So that was that. Anyway then we got to Sheffield and so Lilly was doing endocrinology, she was working with endocrinologists from UCH [University College Hospital] here in London, I've forgotten his name now for a moment. And then also did sessions in Hammersmith, and she did a house job with Russell Fraser, but she was also doing some research on intubating the bile ducts of rats or something, animal work. She had her animal licence from the Home Office. And then we went up to Sheffield. So Illingworth spoke to the Professor of Endocrinology who said 'Yes,' he'd be very happy to take her on board. And so then she applied for transfer of the animal licence and applied to the Medical Research Council (MRC) for transfer of her grant. And then the Home Office said they couldn't transfer the animal licence until the grant was transferred, and the MRC said, 'We can't transfer the grant until we know you're getting an animal licence.' And then there was another Paediatric Unit running in parallel with the Illingworth firm, a Consultant paediatrician and their Senior Registrar who was going off to a Consultant post, and so they asked Lilly if she could help out, because they needed somebody almost immediately. She said, 'Yes, fine.' She'd done a house job in paediatrics in Melbourne and so, as they say, the rest is history. She became a paediatrician. She always worked part-time and she then was doing clinics, welfare clinics and so on, just to keep her hand in, and then she got interested in research, because she'd done research before in Melbourne. She always had a research bent and a biochemical interest, and then eventually she found, when we had four kids, that basically it's a bit difficult doing a full-time research job with four kids, but she made sure the kids were always first, always collect them from school and fed them and topped them up, and then once they were asleep, she'd go in to work at night. And the only people who didn't mind her coming at night were the newborns, so she actually got interested in neonatology as a practical area. And then, of course, she got totally fixated, and was really very good at handling newborns.

**TT: This was the start of the Dubowitz scale?**

VD: What happened in the 1960s, when we came back from the States, I was interested in neurology of the newborn. In fact I gave a lecture at the 50th anniversary of Queen's Square on the neurology of the newborn, because at that time there was no real, proper neurological examination of a premature baby. I had a picture of a premature baby and the Queen's Square knee hammer, which was a little bit longer than the baby. And I said, 'An adult approach to the examination of a newborn is pretty useless and may be potentially hazardous for the patient,' you know, because they're now going to do knee jerks on the thing. And then, of course, we started with various neurological signs that were used for maturation and then doctors were saying, 'Well, if this sign is present it's 32 weeks and if that sign is present it's 36 weeks,' and so on. And this didn't seem to be quite right. The French in particular were following this type of approach. And then Allie Moosa was a South African who had come to the UK and also was doing a job as Registrar in Sheffield, so

we together looked at some babies and we just objectively looked at their gestational age and what stage they developed particular signs at. And we found there was a range.

And then, as a result of that, we actually evolved into not relating a sign to a particular age, but just grading it from minimum to maximum, because that's what had happened with some of the superficial signs, such as breast nodules and ear form. And so we developed these neurological signs and, basically, we were able to show there was variability and then Lil might have had the idea, we did it together. But we thought, 'Well, let's just grade them from 0-5, or 0-3, whatever number.' So you take the maximum, you take the minimum, and you see how many stages you can find between. So we then tested all these neurological signs and the ones that were easy to do and seemed to relate, we just retained. And so we ended up with 11 neurological signs, and then she did a very carefully, meticulously controlled study of 400 successive newborn babies at the Jessop Hospital [Sheffield]; no knowledge of the gestation of the babies, just looked at the babies blind and scored them. And then after she'd finished the 400 she went to the mothers and went through all the obstetrical data, their last period *etc*, all this, and there were about 167, I think it was, that the mothers were certain of dates and had regular cycles, and those she analysed. And then she found that the superficial signs were a bit better than the neurological, which was very disappointing, but then she had a brainwave because that was the most important thing. She then added them together and when she added them together she got something that was almost equivalent to nature, I mean it was such a close fit that you couldn't do better than that on the last gestation or last period and so on. And so that was the basis of the score. And why it suddenly caught on like wildfire was it was practical and it was simple. You didn't need machines and you didn't need calculations; you just needed to look. And the charts were there, you would just put circles around the equivalent on the chart. So in no time they were doing it in Tanzania and they were doing it in Thailand, where she went out a few times to assess babies, and New Guinea and so on. So when we recently had her memorial, we managed to get a guy back from New Guinea who became Professor of Tropical Medicine in Liverpool, and he was telling all these stories. He actually phoned up one day and asked Lil if she'd be prepared to come out to New Guinea to see babies. Of course they were all small and he wasn't sure if they were mature or not. Some psychologist had come and said they were all premature, but he didn't quite believe that. And she said, 'Yes, I'd love to - just get me an airfare.' He was absolutely bowled over. Then Wellcome of course supported us with the airfare, and so we went out. And he was a very humorous guy actually, a bit of a hippy, and he went out there, and was quite wild, and he was telling this story of how it came about. He said, you know, he phoned up and was talking to this iconic person you know who had developed this score and so on. And then she said, 'Yes, she'd be happy to come out,' you know. And he said, 'Here we're living in the bloody bush, we've got pit toilets here and she's coming out, you know, it's like God coming for tea!' [Laughter].

**TT: A wonderful expression.**

VD: He was terribly amusing. Anyway, we went several times and then of course she got involved with Thailand, with the Shoklo camp of the Karen refugees fleeing Burma, and there was a high frequency of malaria there. And when the baby was born, and was small - was it malaria or was it nutrition? Turned out to be nutrition, because malaria doesn't go through the placenta. And then, the most amazing thing, which I hadn't appreciated quite to the extent, is that she had an ability with the fellows that she worked with, that she was always very integrated with them. Always she treated them as if they were her grandchildren or her children or whatever. And so they were saying at the memorial what a personal interaction they had had, which was very interesting.

**TT: That's wonderful. Can we go back to you in Sheffield? Were all your children born in Sheffield?**

VD: Excepting our American one. So when we were there for a year, we went out in 1965, we came back towards the end of 1966, and Lilly was about six months pregnant going out so she had two kids already, and this was the third one. And so this one was born in America and is very proud now. An American citizen, but he's basically British; but when they celebrated the Independence Day centenary on the 4th July, he went out on his own at the age of, I think, about 11, flew out to a friend of his in New York, he was very close

to at school, was born about the same time, I think, in the same hospital, and went to celebrate Independence Day. So our kids, I think, they've got this spirit of travel and independence.

**TT:** So actually you both had your hands full. Burgeoning careers, lots of challenges as well. I'm thinking of your research career in muscular dystrophy, but all this full paediatric load you're also carrying.

VD: I just enjoyed clinical medicine. I had a big clinic of cystic fibrosis; I was treating these kids very actively and in fact we may not have been the first, but certainly we intuitively started giving combined antibiotics. And some of them that were not fully sensitive to either antibiotic, but clearly you got the synergy and stuff. This was already in the 1960s. So I was quite interested in that, and David Lawson at Carshalton, his middle daughter actually had cystic fibrosis and was quite severely affected, and she died at about 11, so perhaps that also partly interested me in that direction. But I was just interested in, I mean I wrote up a single case report, you know, people these days wouldn't write a case report, and there was a baby born at the Jessop Hospital at full-term and was about 3 lbs or 4 lbs, and had a funny face. I still remember her name. And the mother said that her previous child had looked the same, but had been born prematurely and didn't survive. And so I looked up all the syndromes of dwarfism and it didn't quite fully fit, it wasn't clear. So I just wrote a case report in the *British Journal of Genetics*, I think, or something. I said, 'Here's a genetic thing that's recessive and it's an unusual face, with odd ears and a particular nose, and doesn't quite fit in.' And then Opitz, who became a very well-known geneticist in Salt Lake City in the States, he was in Germany and he read this, and then he published an identical case. He said, 'I've seen exactly the same case,' and in fact they looked like sisters, you couldn't tell the one from the other.

And so he started calling it "Dubowitz Syndrome" based on a single case. And it got into the textbook of malformations, or genetics things, Smith whoever did that. So basically on the single case report there, I've got my name attached to a disease. So it was very interesting and even to this day, I still get people coming along and sending cases, and I've seen quite a few, and then somebody thought they had a gene for it in the States, but I'm still not quite sure exactly.

**TT:** And what is it?

VD: Well, they've got slight retardation, they're very small, low birth weight, underdeveloped, and then there's a propensity, what I didn't notice actually because they were using sunlight in those days for vitamin D or whatever in newborns, this child became quite red and then I tested actually with UV [ultraviolet] and found they were hypersensitive to sunlight or to UV. It's mainly their faces and it's not directly recessively inherited, but there is some genetic component. And then it's a small world, of course, I was visiting San Francisco, where one of our sons was at Caltech, and then I was going to Utah to meet up with a neurologist there, because they had a muscle clinic and they wanted to discuss some patients. And I went out there and who should I bump into in the corridor, but Opitz. He was the geneticist there, and he said, 'What are you doing here?' He said, 'I've been trying to get you on the phone! I phoned up the Hammersmith and so on and they said you're not there at the moment.' He said, 'We're having the first meeting next week of the Parents' Support Group for Dubowitz Syndrome. And we've got about 50 families coming from all over the States. Can you come back?' I said, 'Yes, I'll fly back next week. I'll just ask my wife.' Because we were in Los Angeles for about two-three weeks, and so I flew back and saw all these kids, and they all looked pretty similar. Some of them were not quite typical, so they probably were not the same, but those that were typical - and then there were some odd ones, because there was one family where an aunt or somebody had the condition and then another child was born subsequently, so there was some link but it wasn't a straight genetic link. So every now and again I look up if anything recent has been developed. So there we go.

**TT:** In Sheffield did you also have a research lab?

VD: Oh yes, we were in an old building, which you'll see a picture of in my memoirs book.

**TT:** Was it near the children's hospital?

VD: Yes, one of these very old things. In fact, one of these old buildings was an extension of the children's hospital. It was originally a tuberculosis ward in Lorber's day, because he did a lot of early pioneering work with streptomycin and they were saying that you know this building was kept together by the tubercle [laughter]. And so anyway that was, in fact one of the wards was there and there was a long corridor and there was a wash basin at the end, there were two separate taps. And this was supposed to be the isolation ward for infection. So that was part of it, and then I set up the muscle thing, and then I wanted to do some research so I set up some histochemistry and stuff, and I got a grant from the Muscular Dystrophy Group, £500 a year or something, advertised and got a chap who came along. I trained him and then I got money for a cryostat, and then it seemed difficult trying to fit everything into the Department building, so I arranged with John Emery, the pathologist, and he said, 'Oh fine, the guy can come and work here in the lab and work with the cryostat,' because this guy was totally useless and he did nothing, and he was always behind with things and nobody was pushing him and so on. And so, I think, he spontaneously decided to leave, which I encouraged. And then I had a technician who was an absolute gem, came with her mother from school, just finished school and she just had that spark, so I did an Everson Pearse and I appointed her. She was wonderful.

And then eventually it wasn't going to work like that, so we put the cryostat in my office, and so in my office I had a small desk with the cryostat and she was doing sections. That's the first part of it. And then that building was knocked down, eventually, and they built a new Department. I went to see Illingworth and I said, 'I'd like to have an animal house in the basement.' 'Don't be ridiculous, what are you on about?' So I said, 'Well, we're doing some research and we're starting tissue culture muscle.' We were the first actually to tissue culture human muscle, because they were saying at that time it was not possible.

**TT: When was this?**

VD: In the 1960s. And what had happened was, I mean this shows the flexibility of the system. Basically when I arrived in Sheffield and I was trying to get some money for technical stuff and so on, there was nothing available immediately, and then I found out that every Department in Sheffield was entitled to a technician, as a general helper and so on. I spoke to Illingworth and he said, 'No, we don't need that.' So then I spoke to a friend of mine who was in Fuel Technology. Of course they had several technicians. So I went to Illingworth and I said, 'You know I'll just bring you a word of thanks from the Fuel Technology Department, from my friend, and he's very grateful that you haven't used your money, because he's spending it very wisely for you. Now how's about spending it on our Department?' [Laughter]. So then I spoke to the Registrar and he said, 'Oh yes, we've got that money set aside if you want it, but you don't exceed it.' That's fine. And so then a geneticist came to see me, she'd been working with Eric Blank, who was senior geneticist, and she was looking for part-time stuff in research, and so I interviewed her and appointed her half-time. And that was fine, and she was very good, and started with a culture of muscle and so on.

And then out of the blue I got a call one day from Alan Roper who was Professor of Genetics, and he said, 'Look, we've got a bright, young thing here who is bouncing all over the place, and we've offered her a job that we've got and she says we're very nice people, and she's very interested, but she doesn't really like the work we are doing,' which was on yeast genetics or something. 'She'd like something human-related. Have you got anything you can offer her?' I said, 'Send her along.' A breath of fresh air. She qualified from Manchester, a medical BSc or something. And so she was full of ideas and tissue culture, fantastic, very excited about tissue culture. I phoned up the Registrar, in those days you could talk to the Registrar directly. And I said, 'Remember we had the technician post? You remember I appointed this geneticist half-time? I've just got a very bright postgraduate student, done her BSc and things, and I think she's just what we're looking for, for some research. Any possibility of using the other half at all?' He said, 'Oh yes, no problem, as long as you don't exceed the total.' So I appointed her full-time as a Research Fellow, she did a PhD Thesis, and she was just absolutely phenomenal. Between the two of them they cultured human muscle, they got engaged with nerve muscle preparations interactions. I sent her to New York to go and see Silverman who started her nerve muscle preparations, and so it went on. I hear from her from time to time, in fact she phoned me up about a year ago and came to visit me in London.

**TT:** There's somebody who did come to apply to do a PhD with you, no post-doc I think, and that was Jan Witkowski. He's going to write the introduction to the muscular dystrophy Witness Seminar book.

VD: Oh, fantastic. Jan Witkowski is very interesting you see. So Jan was working at the MRC centre in London in Hampstead, doing basic research and he came up to Sheffield and we interviewed him and he said, 'You know, to be quite honest, I'm very interested in coming to Sheffield, because I like mountaineering. The mountains around Derbyshire, in fact.' So anyway we appointed him as a Post-doc Fellow and he was great, because he also started all the tissue culture stuff and all that. And then it was a matter of months after that, I got offered the post in London, which was a different story. I was in Australia travelling around on my way to New Guinea actually, and I get a call from Illingworth. And he says, 'Why haven't you put in for the Chair at the Institute in London?' I said, 'Because there's a Reader in the Department, that's worked with Tizard, and I'm sure it's all fixed.' 'No, no, Otto Wolff, Head of Paediatrics at the Institute of Child Health phoned him up and said, 'Why haven't you put in?'' So I put in an application, was shortlisted and offered the post. But there were numerous problems with research facilities and bringing my team along.

So then I didn't want to leave Sheffield, but that's another story. So I said to Illingworth, 'If I can get a personal Chair here, I'd prefer not to go to London,' because there were all sorts of difficulties with housing. So he sent me to the Vice-Chancellor and so he listened out my story and said, 'Well, we have a policy in Sheffield that we don't give personal Chairs to people who deserve it.' I said, 'What do you mean?' He said, 'Well, our policy is that if you can get a Chair on the open market, we wish you well. I mean we sent off [Edward] Mellanby and we sent off [Howard] Florey and we sent off [Hans] Krebs, and we wished them all well, you see [laughs]. And that's our policy. And the only people we give personal chairs are the people who are stuck in a cul-de-sac and they can't get a Chair outside.' So anyway I said, 'Well, I'm terribly sorry about that,' because we were very happy in Sheffield. We had our kids there in school, and so who wants to go to London, you know, for the rat race? So there we were. So that was that part of the story.

**TT:** So poor Jan missed out on his climbing?

VD: So then to Jan, I said, 'Look, I'm terribly sorry, Jan, but we're going back to London. I mean if you want to stay here in Sheffield, I'll find something.' He said, 'No, no, I'm coming with you.' And so he came with us and then of course we got money from the Muscular Dystrophy Association of America to put up our labs and that was another story, because nobody had any space. You know at the Hammersmith everybody was too full, I went to a Surgical Department once after we had a fire and I found a whole lab there with two people in it. So we got temporary accommodation. Anyway Jan Witkowski came with us to London and we set up the lab. Then I found out there was some space on top of one of the roofs, which was flat, of the hospital. And I went and got all the original plans out and there was nothing that said you can't build another floor. So nobody had thought of it, you see, so it's not that the Department of Medicine said, 'No, that's reserved for us, you know. You can't have it.' And so we actually got permission to build, we got money from Action Research, and so we put up the lab up top there. But the Hammersmith was a very competitive place.

**TT:** Who was at the Hammersmith when you went back?

VD: The Professor of Medicine at that time, was your friend, Chris Booth. Keith Peters became Professor later. Now I remember Booth very well, because I went to see him soon after and asked him for advice about a member of staff. I went to see, to talk to Chris Booth. He said, 'I never worry about the people who leave. I only worry about the people who stay.' A very important thing because I was saying, 'This guy leaves, that guy leaves, what do we do, or whatever?' Never worry about those people, it's the people who stay. He said, 'If somebody good leaves you always get another person good to put in their place.' A very important principle from Chris Booth. There we go.

**TT:** And where did the link with Jerry Lewis come in? Was that part of that lab?

VD: Ah, Jerry Lewis. That was it. Basically, I had nowhere to do research, and so initially we had some facility in what was called the “labour yard”, and it was awaiting destruction, but there was an old lab there that was still available.

**TT: This is something Jan has asked me to ask you about, because he told me about an anniversary of yours when he and Kay Davis were at Cold Spring Harbor and they sent you a telegram talking about the labour yard. And Jan said to me, ‘Ask Victor about the labour yard.’**

VD: I see, so you’ve been colluding with Jan Witkowski, getting all my secrets! It’s in the Hammersmith Hospital, and originally when it was a poorhouse hospital, they used to take in people who were indigent, they had a labour yard there where these people actually did work and chopped up things and so on. Because I think they also looked after the indigent poor, or whatever, it was one of these poor houses or work houses. And that was at the turn of the last century. And then the Rheumatology Department, I think, had some use of some of the building that was connected with it, but it was now condemned and it was going to be cleared, you see. And so I found this building and they said, ‘No, it’s the labour yard, it’s unfit for human habitation.’ So I said, ‘Well, I’m sure it’s alright for us for a little while.’ [Laughter]. And we actually settled into this labour yard, and that’s where Jan came along. And of course Jan very happily came, and then he got interested in tissue culture and the nerve muscle culture and stuff as well, and he was doing some very interesting time-lapse photography of movement of cells and comparing dystrophic and normal cells, you know, so it was quite an exciting time. But that’s the labour yard. So we can look it up on the web, we’ll probably find something about the Hammersmith labour yard.

So we were in there and then we were looking for accommodation, and what happened was that I spoke to various people and there was Richard Edwards, a very close colleague and a long-standing friend, and he was interested in respiratory medicine mainly, but he was also interested in muscle biopsies in order to study physiology of muscle, and had worked with Bergstrom in Sweden who was developing this type of needle biopsy in athletes. And he was in the Department of Medicine, and he was also interested in coming into a muscle lab and doing some muscle work, so we had a combined interest. And then David Hill actually personally knew one of the people who was on the Executive Board of the American Muscular Dystrophy Association, Gibson, Vice-Chancellor at University of Victoria Vancouver Island?

**TT: British Columbia, Vancouver? I think you mean Bill Gibson, knew Sherrington?**

VD: Yes, and we went to visit him on a number of occasions subsequently. A delightful person. Yes, he worked with Sherrington at the turn of the century in physiology; he was a great physiologist. And so, basically, he engineered it for us because the Americans were very insular and they weren’t going to give money to anybody doing research outside America. But he said, ‘This is very important, we have to promote international muscle research, and that’s what the Muscular Dystrophy Group of America is collecting for. We can’t just be insular and stick to ourselves.’ And so they gave me a grant of \$300,000 with the stipulation that they would not support any research in it, but this is just for the building, and then we would find our own research fund. So we took it up and we told them we’d like to give it some connotation, and so we called it the “Jerry Lewis”. And Jerry Lewis actually came out to open it, and it was rather tough for Jerry Lewis actually, because his agents also set up a Jerry Lewis concert or something and, in my youth, I remember he was the mad doctor with Lewis and the other guy...

**TT: Dean Martin?**

VD: ... Dean Martin and Jerry Lewis, yes. And so he had this big concert planned in Hammersmith, and it fell absolutely flat and he just couldn’t communicate with this audience of middle aged people or whatever, who should have remembered Jerry Lewis, you know. So he wasn’t in very good spirits. But so we explained to him what a muscle was, but he was the guy who had the telethon already every year in the States and collected millions, and he went flat out for three days and was talking about his kids and he personally became very involved, so this was very interesting.



**TT: Did he have a personal connection? A child with muscular dystrophy?**

VD: No, no, I think the muscular dystrophy, they had just engaged him as a comedian and as a guy who could run the appeal, the annual telethon, because they started the telethon system, which was a television marathon. And so it went on for three days with this marathon on television, collecting. And then, of course, the French did the same, and then the Italians. So that was him coming out and in fact Richard Edwards was also developing mechanical things for measuring force of muscle and so on, because he was more interested in the physiology side, and he gave Jerry Lewis one of these constructed pressure measuring things as a memento. We've got a picture somewhere of handing that over. Then he also came to the lab and I think there was a picture of him with Jan somewhere.

**TT: There is, because I've got a copy of that picture.**

VD: Oh well, very good, because I remember that picture, and I remember him going in the lab and he even looked down a microscope and tried to see what was going on.

**TT: Do you know the story, I'm diverting here, but it's a story about someone you mentioned earlier, Peter Daniel. And it was the opening of new labs down at the Institute of Psychiatry. The Queen Mother went to open the labs. There is a picture in I think the *Daily Express*, of Peter Daniel in a pristine white coat, explaining something to the Queen Mother. In the *Daily Express* it says, 'Queen Mother talking with the head chef about the patients' dinners.' [Laughter].**

VD: That's absolutely lovely. Well I had an experience once actually because the Duke of Edinburgh came to open up our new child health department. We built out on the roof of one of the outbuildings there and got money from Action Research and the Duke of Edinburgh came along to open it. And he was chatting, we took him round the wards and stuff and then he started talking about injuries that give you calcification and stuff, you know, gun injury, but he was worried mainly about these muscles. And that's of course polo players apparently get this calcinosis. But anyway there was a picture of him and myself with my white coat, and then there's one or two of the dignitaries from the institute who came along to be part of it, and this came on the cover of I think it was the nursing journal or one of these things. So I sent a copy to my mother and so she jokingly said to my brother or something, "Who's that guy with Victor?" That was an in-house joke. But anyway Jan Witkowski was great and we had a great time. And then of course the Muscular Dystrophy Association, they were very political, there were a few people who influenced them politically outside, and basically Jan was doing a lot of different types of research and things and then we were trying to get him some long-term support and they said no, basically what they need to do for him is send him to the States to get some training in molecular genetics or whatever. And he went to the States and he never came back, but he went to various places. And then the guy who was appointed at Cold Spring Harbour died shortly after appointment and Jan was approached and he's been there ever since. No, he was great actually, we had a great team. And so he's filled you in. He's been here recently or you've been to Cold Spring Harbor?

**TT: No, no, just on e-mail. I've just done a Witness Seminar on NIMR [National Institute for Medical Research] technicians, and he sent me an e-mail saying, 'It's a long time since we met at Cold Spring Harbor. Do you remember I started at NIMR?'. So that re-started the connection and I told him of the muscular dystrophy meeting, and that I remembered him telling me the story of going to work with you in Sheffield, because he wanted to go climbing. And so I thought to ask him to write the introduction to the volume.**

VD: That's amazing, that's very good. He's done some interesting books. He invited me along when they had the DNA book at the Wellcome Trust, there was the whole crowd of all these big scientists. And he's done a very good one on DNA and the Watson story and all the background.

**TT: Coming back to the Hammersmith, Victor. You move there and you're Head of the Department?**

VD: Yes, what then happened was I got this call from Illingworth when I was in Australia and I put in for the job and then there were four of us shortlisted. They were prodding me for all sorts of details and what would I do with this and that. And of course the rumour immediately went around after they announced my appointment via Tizard and his group saying that I was going to close the Neonatal Unit and start a Muscle Unit there, and I said nothing of the kind. And I gave them an assurance that we wouldn't reduce anything, if anything we'd expand the Neonatal Unit, which is of course what we did. What the Institute of Child Health really wanted, why they were interested in me, was they wanted to expand paediatrics at the Hammersmith, because Peter Tizard actually had a personal Chair. He'd originally been seconded there as Senior Lecturer in Neonatal, linked up with Great Ormond Street and the Institute of Child Health, and then he had a personal Chair and there was no established Chair there, so now they established a Chair of Paediatrics and Neonatal Medicine within the University at the Hammersmith.

**TT: And that was you?**

VD: That was me. They offered me the post and then, Logan was the Vice-Chancellor chairing the interview, and then I asked a few embarrassing questions like, 'What is the Department's annual grant, or departmental grant?' They said, 'What?' I said, 'Don't you have a departmental grant?' Nothing. Then they offered me a second class return rail fare for my interview. I said, 'Well, in Sheffield, even as a Lecturer they give you a first class fare even if you don't use it and travel ordinary class, it doesn't matter.' There was nothing in place for helping you, moving expenses or anything. So it took me five weeks actually before I accepted the post, and that's when I went to see the Vice-Chancellor in Sheffield. But anyway it's worked out okay, and so there we go.

**TT: They were expecting it was such an honour to be in Hammersmith that you had to pay for it almost?**

VD: Yes. The Hammersmith was an outpost of the Institute and so I was actually on the Boards and panels at the Institute of Child Health, but also at the Hammersmith, of course, I was Professor of Paediatrics and Neonatal Medicine of the Institute at the Hammersmith, so therefore on the Clinical Board there as well. And then eventually when Hammersmith became an independent School, outside the Postgraduate Federation, then we had to make a decision whether we still stay part of the Institute or part of the Postgraduate School, and it seemed obvious that we should be part of the Postgraduate School then, which we did. And so, basically, we severed the link at that time.

**TT: What changes did you find moving from Sheffield back to the Hammersmith? You'd already had links with Hammersmith, but now you're coming in as the boss, so you have a clinical load, a research load, you were teaching?**

VD: Well, it was very different, because when I was there originally it was a great era at the Hammersmith for development. I used to go to all the grand rounds on Wednesday mornings, which were in a small lecture theatre down on the ground floor. Of course now with the new building they were on Wednesdays in the big lecture theatre and, of course, once you get at a place like the Hammersmith and you've got a Chair there, there's a little honeymoon period, but then you're battling with everybody else and everybody's needs are much greater than your own obviously. So you've got to make a few friends. It was a different world but it was interesting. I was officially Professor of an academic Department and also Director of Service. These days, even then very often at most universities, the Director of Clinical Service was separate from a Professor. And I used to go around the Neonatal Unit every Friday morning, see all the babies, discuss them and so on, although I wasn't involved in the intensive care of the newborns, but I was interested because I told them I was going to continue. Lilly of course became interested voluntarily, and she did a lot of work on the ultrasound and so on. Of course that was another thing: we started doing continuous EEGs [electroencephalograms], which Tizard's original thing was doing standard EEGs on all these babies. Loads and loads, they had a room full of all these EEGs, which nobody was ever going to look at or do anything. So I had to tell Tizard, you know, either we'll have a bonfire or come and collect them.

So, anyway, we gradually started expanding research and clinical research, and then we started doing continuous EEGs, you know, with few leads, and had a guy who actually prepared a thesis on this. And then I went to see Pampiglione who was the guy at Great Ormond Street, who was the EEG king, and I said, 'We're doing this stuff on the newborns and we'd like somebody to train up in this area, and would you be prepared to have them as secondment, you know? It would be one of our Registrars or staff or whatever.' And he said, 'Yes, that's fine. Just arrange for them to come for nine months and I'll teach them all about EEGs.' So I came back and I spoke to Lil about the nine months. She said, 'I'll have a go.' Okay. And so we had a guy, John Connell, one of the registrars or fellows, and between him and Lil, they started just doing it, putting things on, connecting the leads, and a week or two and it was up and away, you see. Instead of these, and the same happened with ultrasound, you see. In America all the ultrasound, all the babies' heads were being done by the radiologist, and they'd send their technician in to do the ultrasound and they'd look at the pictures. So Lil was going around with a bloody machine on every baby in the Unit, every morning of the week. No official appointment or payment or anything, but she just enjoyed it. In no time, Neena Modi who is now President of the College of Paediatrics and Child Health, spoke at Lilly's memorial as well because she knew her, and she said, 'The most amazing thing was Lilly going around and everybody going around with her, and just doing these ultrasounds, and seeing there's a haemorrhage and there's this and there's that.' And in no time, you know, you just get on and do it. Now there's politics and there's this, and health and safety and that. I don't know how I'd survive in this environment [laughter], because you know what was nice in those days was just the freedom of doing what you wanted to do, in a sense. So I went to Queen Mary's, okay, the first thing I did was to go around all the wards, tuberculosis, polio, Perthes disease at rest, rheumatic fever, they rested them for a year to save the heart and so on. And then I went and did a diploma in child health, because I had all the clinical experience, it was all there, and I used to take the students around and just walk them through these wards. So it was great fun.

**TT: What was the main stimulation when you got to Hammersmith with your new colleagues? Was there something new that really took your imagination? You'd already been pioneering tissue cultures.**

VD: Yes, we were already doing newborn stuff and we already had the Dubowitz score, which, of course, they weren't doing at the Hammersmith, because they were still doing their old fashioned things. No, there was Pamela Davis, she was Senior Lecturer there. Everybody was on grants apart from the Reader, he had a permanent post. And so the first thing I had to do, I managed to establish one or two extra posts, and get people some security. But I had to assure people that we weren't going to infringe or run down whatever was going. Pamela Davis' was doing long-term follow ups, which she was pioneering, seeing these babies from prematurity right through to five, six, seven years of age, that went on. And so, basically, I encouraged all this, and then we just started gradually adding on, and then the muscle thing was entirely separate, there was no infringement. And then we also tried to develop general paediatrics, so I got linked up with the haematologists and the anaemias, and things were all coming through, and then there was the cardiology and there was Dr Hallidie-Smith, the niece of, I think, John MacMichael, the cardiologist, anyway. And she was doing all the paediatric cardiology, and so she was doing these catheters and things, and so we had all these people we gathered in, and it worked very well.

I went around all the wards in the hospital collecting children. I said, you know, it's not appropriate for these kids having tonsillectomies to be on the adult ENT [Ear, Nose & Throat] Unit. They need paediatric nursing. And the same with the surgical wards. I said, 'We're getting them all back to Paediatric Department and then you can look after them in the paediatric ward. They are still your patients.' And then I used to go around the general wards every Thursday, and then I'd come to a patient and the resident would say, 'That's only an ENT, that's tonsils or something.' And I'd say, 'What do you mean it's only a tonsils? Is it medical tonsils or surgical tonsils?' So they'd say, 'I don't know.' I said, 'Well, get the notes and just check why is the child having his tonsils out? If that's a surgical tonsils, it's ENT. If the child's got obstruction and recurrent infection, well then that's medical tonsils, you know?' So they gradually started getting the point. This is medical tonsils. And then one day we're going around and they said, 'That's only a dental case.' Once a week the dentists came in from the Institute of Dentistry and they did any tooth stuff that needed doing on the Paediatric Unit. So I said, 'What do you mean it's just a dental? Why is the child here?' So they said, 'We

don't know.' So I said, 'It's your ward. Can you get the notes? What's he having?' 'Clearance of teeth or something. Got six bad teeth,' I'd be told. 'That's interesting. Are they doing it under local or are they doing it under general.' 'General anaesthetic.' 'Okay, will you go and phone the dentist and tell him that I've cancelled this case and I'd like to chat to him, because the child's got myotonic dystrophy. And if you give it an anaesthetic it may not wake up again, because they're very sensitive to relaxants and things.'

So this child had a drooping face and a weakness and so I made a diagnosis, which was quite obvious. And so that taught them the lesson, you see? When I went to South Africa once, just on holiday, there was a paediatric surgeon, who I knew very well, but he had a brother who became Professor of Dentistry to the Cape Coloured, Western Cape University. So I went out on holiday and I get a call from this surgeon guy, saying, 'Would you be prepared to go and lecture out at the Dental School?' His brother would like me to come out and lecture. So I said, 'What do I talk to dentists about? I know nothing about teeth. But okay, I'll give a lecture.' So I went to them and I gave them an hour's lecture, illustrated, on the sorts of conditions you need to look out for when you're dealing with people's teeth. You see if somebody's not answering you and they've got a white forelock, they've probably got Waardenburg syndrome and they are stone deaf, so you don't shout at the patient for not listening. If you see somebody who may have a muscle thing, don't you dare give an anaesthetic to a muscle patient without checking what the muscle condition is. And so in no time, it was possible to tell them a bit of clinical medicine in relation to the dental check. I quite enjoyed that actually, that was a challenge.

**TT: What about your own research at the Hammersmith?**

VD: I was doing this histochemistry and I defined the fibre types in human muscle and there were people at that time who were dividing into 12 fibre types and six fibre types and red muscle and white muscle. And I said, 'I can't see the colour of the muscle when I do biopsies.' You can tell the enzyme stuff but you've got to use the language appropriate to the technique. And then in 1972/73 - just about the time - I came to the Hammersmith, I was at a meeting in Denver, Colorado, on muscle and I was giving a talk on histochemistry. And met this very nice guy there, ex-British, who was a neurologist in Denver, and we were having a glass of beer and he was also interested in this histochemistry in muscle and he'd set up a lab. And so we started talking and we said, 'How about doing a book?' Because this was new, you see. And then we agreed to do a book and we started exchanging material, putting it together, and then we started arguing on interpretation and then we did a chapter on how to interpret the biopsy, and this is what this guy says, and this is what I say. And eventually it was published and they couldn't publish it in the Saunders series on pathology, because there was already a pathology book by Trevor Hughes, which was traditional H&E [haematoxylin and eosin] on fixed, old fashioned material. But Saunders published it in the neurology series and it was called *The Blue Bible*; just small, blue and it sold out in a year, and they said they'd wait for the second edition, they weren't going to do another reprint. But, anyway, that was the start.

And for the second edition Mike Brooke wasn't interested, he was now interested in steroids and Duchenne disease and so on, and so I wrote around to 60 people, do we need a second edition, what do you think, or whatever? And they all said, 'Yes, it's very useful.' So I did it on my own and it nearly killed me. And then for the third edition Saunders was now taken over by Elsevier, and I asked Caroline Sewry who had worked with Pearse, got a fellowship from Dystrophy Group on the strength of Pearse's interest in muscle. So, anyway, for the third edition she came to work with me and she converted all the black and white pictures to colour, which meant starting from scratch again. And then the fourth edition we needed somebody extra because it was expanding and so we got Anders Oldfors to come on board, and it's now become quite a well recognised book. And then we had a call in March from an Elsevier guy up in Edinburgh that they want to do a fifth edition, because it's almost sold out. So we're now working on fifth edition, which they weren't really very keen to do because nobody thought it would need a fifth edition, but I managed to convince my two colleagues, 'We're not writing a new book again like we did before, we're just going to change about 20%, a bit of window dressing.'

**TT: Well, congratulations, that's a great achievement.**

VD: Thanks. Well, it's work [laughs].

**TT: You mentioned the muscle meeting in Denver, Colorado. I'd like to ask you about societies and meetings and the role that they have played in your career. It's very interesting, looking through your CV there's such a range - some very precise, clinical ones to some really heavy-duty research ones.**

VD: Well, I became a Member of the Physiological Society shortly before I took up my clinical post at the Hammersmith, and got in on the strength of the cross innervation work I'd done. Because when I was in the States for a year I followed up the original stuff that Eccles had developed of crossing nerves together with the Professor from Bristol, Arthur Buller. And I thought it would be interesting to look at this histochemically, because they were arguing whether it's a change in tropism or whether it's a change in speed. And we showed that if you take a muscle like the soleus, which is mainly type one fibres, and a mixed muscle, and you cross the nerves, then in the mixed muscle you suddenly get big areas of the same muscle fibre, type one. So the nerve from the soleus is actually influencing the fibre type. And Gerta Vrbova, I got to know very well when she was still in Birmingham, has been very interested in the influence of nerve on muscle. So I still speak to her about it.

**TT: Oh, do give her my best wishes.**

VD: You know her as well?

**TT: Gerta seconded me when I was elected to the Physiological Society.**

VD: And you also worked with Barer in Sheffield, which year was that?

**TT: That was the early 1970s, 1973 or so.**

VD: Just after I'd left.

**TT: Then I did my PhD on histochemistry of Octopus brain. So Pearse's two volume book on Histochemistry, that was my bible.**

VD: Well, when I went to Pearse, he'd just done his first edition and was just making a name for himself. In 1960, just after we got married, or we were engaged anyway, Pearse says to me, 'Would you like to come along to Poland? There's a meeting of the histochemists there, and there's Padykula and Herman and all these guys from all over coming.' So I said, 'Yes, I'd love to come.' He said, 'Will you give a talk on muscle?' 'Okay.' So I actually went to this high-powered meeting in Poland at that time, on the histochemistry and met up with all these really big names, and it was very interesting.

**TT: You started talking about the Physiological Society.**

VD: Yes, so I was a Member of the Physiological Society because of the cross innervation stuff, and I gave a paper there and they said, 'It's okay, we'll make you a Member.' You know, you had to apply.

**TT: It was a terrible performance in those days.**

VD: Well, it's the same in the Neonatal Society, because there was McCance and Widdowson who used to sit in the front row at meetings. And McCance used to tear everybody apart who wasn't a Sheep physiologist, saying that wasn't proper physiology *etc.* And there were always one or two people who knew better who asked you about the statistics. But the interesting thing was, that soon after I got to the Hammersmith, the Physiological Society asked me if I would host a meeting of the Physiological Society at the Hammersmith. So I said, 'Yes, sure.' And then I said, 'What are we going to do?' So I said, 'Okay, we'll get together the

basic scientists, and we'll get together the clinical scientists,' and I think it was a combined meeting of the Medical Research Society or some group from both directions.

**TT: What year was that?**

VD: I think it was in, it would have been around 1973, 1974, because I know we had one guy over from the States who had done some work about innervations and stuff. And it was very nice because I was given a free rein more or less on the things.

I did a paper for the Physiological Society for *The Journal of Physiology* in 1965, and I had all my cross-innervation stuff there and I did some biochemistry as well at the Institute, and in New York, because I met up with Barkany and he was a very good histochemist, and Sandow who was a physiologist, so we did some good stuff on the muscle. Anyway we wrote this paper for *The Journal of Physiology* and got no bloody response. And after about eight months I said, 'Look, if you're not interested I'd just like to publish this somewhere else.' They said, 'No, no, we're expecting a reply soon.' And then after another month we got it, and it was Arthur Buller who was actually reviewing it. But he was so anti all the results because he was so fixed in his original ideas about the cross-innervation that he was trying to block it. And then eventually the, whoever the Editor was or whoever, said, 'You know, it's okay, it's been accepted now,' and then they published it. But it took them about 18 months from the time I'd done the work.

**TT: And talking about time, I've been interrogating you now for over two and a half hours, so perhaps we should stop. Thank you very much Victor.**

[END OF TRANSCRIPT]

**Further related resources:**

1. Christie D A, Tansey E M (eds) (2001) *Maternal Care*. Wellcome Witnesses to Twentieth Century Medicine, vol. 12. London: Wellcome Trust Center for the History of Medicine at UCL.
2. Dubowitz V (2005) *Ramblings of a Peripatetic Paediatrician*. Stanhope: The Memoir Club.
3. Tansey E M (intvr); Tansey E M, Yabsley A (eds) (2017) *Dubowitz, Victor: transcript of a video interview (27-Sep-2016)*. History of Modern Biomedicine Interviews (Digital Collection), item e2017111. London: Queen Mary University of London.
4. Zarros A, Overy C, Mikami K, Sturdy S, Tansey E M (eds) (2017) *The Therapeutic Implications of Muscular Dystrophy Genomics*. Wellcome Witnesses to Contemporary Medicine, vol. 62. London: Queen Mary University of London.