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Dr John Zorab in interview with Lady Wendy Ball
Oxford, 11th November 1996, Interview II

WB Dr Zorab, when we last met you were talking about the men who had influenced you greatly during your career and we talked about Sir Geoffrey Organe and Patrick Shackleton and you were about to tell me a little about Russell Davies and also Cyril Scurr. Would you like to just tell me a bit more about them?

JZ Yes. Russell Davies who was head of the department of anaesthesia at the Queen Victoria Hospital in East Grinstead was a wonderful chief for me to have had. As I related earlier, I'd had a somewhat sticky earlier training and Russell was able to offer me a first-class training in those aspects of anaesthesia connected with plastic surgery in particular. But it was quite clear that there were several huge holes in my training, one of which was thoracic and cardiac surgery. And it was Russell who made the arrangements for me to go up to Westminster where I both renewed my acquaintance with Geoffrey Organe and met, I suspect not for the first time but certainly began to work, with Cyril Scurr. This was quite an exciting time in cardiac surgery. It was the days when they were using a technique known as deep profound hypothermia and we would cool these children down until to touch they really felt like something straight out of the fridge, it was quite uncanny. And I spent one day a week learning a great deal about clinical anaesthesia from both Cyril and Geoffrey, and I'm sure that this laid the path for my later appointment as a senior registrar on a Westminster and Southampton rotation. I started that rotation in Southampton and after a while Patrick Shackleton thought I would benefit from spending a time overseas - this was very common. And to cut a long story short Shackleton suggested I went to Scandinavia for three months. And he arranged an exchange with Professor Ole Secher in Copenhagen who seconded one of his, a lady senior registrar to Southampton and I went over and took her post up in Copenhagen. This solved a lot of problems over salaries and so on rather than actually having to add someone to the staff. I spent three months in Copenhagen and from that time, which was immensely enjoyable, two important facets emerged which influenced me really for the rest of my professional life. At that time Scandinavia was acknowledged to be leading the world perhaps in the development of intensive care, particularly intensive care equipment, and Danish companies were designing equipment far in advance of anything we had in the UK. So I got a little involved in this and Secher also arranged for me to go to Sweden to the Karolinska Institute in Stockholm and to Uppsala in particular. And my interest in intensive care, which had to some extent begun in Southampton, was fostered, and it was a specialty that subsequently I remained interested in and indeed practised for virtually the rest of my professional life. But there was another side to my time in Copenhagen. Not long after the war, the World Health Organisation, the WHO, recognised that anaesthesia was a very undeveloped specialty on a worldwide basis and the WHO in conjunction with the University of Copenhagen set up an annual course in anaesthesia. It was a one-year course held each year and this attracted trainee anaesthetists. When I say trainee, it's not quite trainee in the sense

we use the word today. Many of these were relatively senior people but who had had very little formal training and these people would gather in Copenhagen. Now, this I think started in '55 so it had been going for ten years by the time I got there in '65. Many distinguished teachers from round the world and the UK in particular; Geoffrey Organe had certainly taught there himself as had Patrick Shackleton as had Harry Churchill-Davidson as had Sir Robert Macintosh. In fact, I have a rather treasured photograph at home of Sir Robert standing in the middle of a whole gang of students from all over the world. And it was exposure to these people that began to foster my interest in what went on in Thailand, in Argentina, in China and in all sorts of places so that this, in addition to the clinical experience, made Copenhagen a very special time for me. There was one other aspect I think is just worth mentioning briefly. Copenhagen was the first time I had been exposed to nurse anaesthetists. And when I first started there I found myself in charge of the anaesthetics going on in nine operating rooms. Each operating room would have one senior nurse anaesthetist and one trainee nurse anaesthetist, and I would spend my morning or early part of the afternoon literally going from room to room to make sure that all was well. I was expected to be present at the induction of anaesthesia for every patient and at the end of every anaesthetic and if the surgeons worked out of synch it sometimes became quite difficult.

WB It must have been very difficult to get there on time. I believe you actually had what was called a resuscitation scooter to get around on?

JZ Yes. It was a vast, sprawling hospital, the Rigshospital in Copenhagen. It has now been completely rebuilt and is a tower block, but the old one had these hugely long corridors. And yes, as you say, the duty anaesthetic registrar had a resuscitation scooter with a little cage on it into which one could put the box of resuscitation equipment. And a very large bell on the handlebars so that as you scooted down the corridors, you could warn everyone of your arrival.

WB That must have been a huge workload. I mean, have you ever had such a workload in more recent times?

JZ I don't think the workload was actually very different to what one was expected to do here in those times. Indeed, to some extent it was less inasmuch as the Danes do not really believe in working in the operating theatre much after 2 or 3 o'clock in the afternoon. They don't have the conventional sort of 9 o'clock lists that tend to go on till 6 and 7 as in most British hospitals. They do make perhaps earlier starts throughout Scandinavia, but mostly they finish operating by 2 or 3.

WB And it was at this time you met Dr Ibsen?

JZ Yes, there were two or three people that I was very pleased to meet in Copenhagen during this three-month period. One was Professor Bjørn Ibsen, a famous name in anaesthesia because he and Lassen[1] were instrumental in introducing 'positive pressure respiration' as a means of treating patients with poliomyelitis. They had this dreadful poliomyelitis epidemic in Copenhagen in 1951. And Ibsen

[1] HCA Lassen

organised teams of medical students holding bags to ventilate the patients manually for days and days on end because this was before the time of mechanical ventilators, although it was during the course of that epidemic that the first mechanical ventilators were in fact developed. There were other people besides Ibsen. There was a man called Professor Willy Dam at the Bispebjerg Hospital in Copenhagen. And perhaps in particular a lovely man who is still with us fortunately, Professor Henning Ruben, who was the inventor of the self-inflating bag, now a standard piece of resuscitation equipment throughout the world.

WB So, in fact you came back with increasingly new ideas about the world need for improvement in anaesthetic education and training. And you came back to Britain after three months, perhaps with the idea of doing something like that in the future?

JZ I doubt whether it was as crystallised as that in those days. I certainly came back full of enthusiasm for developments in intensive care. I came back to Southampton in the first instance and in some ways was somewhat frustrated by the appalling lack of equipment that we had at that hospital there compared to what I had seen in places like Copenhagen and Uppsala in Stockholm.

WB Were you able to persuade the authorities to improve the equipment in Britain as a result?

JZ Not in the time available. And of course partly because by then I was coming to the end of my senior registrar stint in Southampton and moved to London to the Westminster Hospital where there was no intensive care unit at all at that time.

WB And this is now 1965 or thereabouts?

JZ This is late 1965, November I think it was I moved up to London. The nearest they had was a small converted four-bed ward where the post-operative cardiac patients were nursed. There I think I did have a little bit of influence. And I once wrote a long memorandum to Sir Geoffrey Organe who was head of the department there, and with encouragement from Cyril Scurr, explaining the changes that we could make to this room based on what I had seen in Scandinavia to improve the care of these patients. Not only did those changes eventually come to pass, but if I can just jump forward a little further, a couple of years later in 1968 I was elected to the council of the Association of Anaesthetists. I wasn't at all clear why I had been 'chosen' because in those days there was nothing democratic about this. This was a question of the existing council deciding who they would nominate for the vacancies for the next Council. And I asked Geoffrey Organe once why I had been chosen in this way and he said 'Oh well, I thought you were able to write a memorandum, that's quite a useful thing to be able to do on the council of the Association.' How true that was I don't know. But before we go to there, I completed the other half of my senior registrar job at Westminster, which was a very nice time. Although living in a flat in Putney with four children did present problems of its own; some of which were undoubtedly financial, so that I was really very pleased to have the opportunity to apply for the job at the Frenchay Hospital in Bristol. I had applied for one or two other jobs before that to which I hadn't been appointed, one of which was at Guy's. The person who was appointed as it were over my head at Guy's is still a consultant

there and has remained a very good friend of mine. When I moved to Bristol I can recall very clearly my first really considerable disappointment. I was fairly sure that had I hung on at Westminster a bit longer I would have got a London job and to me London was the centre of the universe. I'd lived there for twenty-five years; I didn't want to leave. But there were financial reasons why it made it necessary to get a job quickly. And while I was first at Frenchay Hospital over the next few years I did indeed apply for one or two other consultant jobs elsewhere, it was that sort of frustration, I thought I'd moved to the sticks. This feeling began to wear off after a couple of years. I realised that I'd got a much better environment for my wife and for my children. And somewhat I think to my surprise I began to find that Frenchay was an excellent platform to do many of the things that I wanted to do, things that I might have had enormous difficulty in doing had I been in the environment of a teaching hospital.

WB Can we just go back briefly to your application because I believe you actually applied for a job for which you weren't totally qualified and that there were three elements to this job. Can you tell us a bit about that?

JZ Yes, yes, that's true. The job as advertised required the applicant to have experience in thoracic surgery, in neurosurgery and in plastic surgery. Now, I'd done quite a lot of thoracic surgery at the Westminster half of my job and I had had my nearly a year at East Grinstead doing plastic surgery but I had never even seen a neuroanaesthetic given. And not unreasonably, one of the people on the interview committee said 'Why are you applying for this job which includes neuroanaesthesia when you have no experience in this field?' To which there was really only one answer, which was that I was only 34 and I thought I wasn't too old to learn. And indeed when I started that job at Frenchay Hospital one of the senior registrars who was there, a man called John Bowes, a long-standing friend of mine who has now retired, he was as it were delegated to hold my hand for the first few neuro-lists. And for other reasons I actually left the thoracic anaesthesia field after nine months or so and concentrated on neuroanaesthesia. And that really became my primary sub-specialty for the rest of my working life there.

WB So that was a very fortunate occurrence in a way which pushed you into a new field?

JZ It was a fortunate occurrence. And it was also helped by the fact that six months after I'd been appointed to Frenchay, they appointed a new neurosurgeon, a man now no longer with us sadly called Huw Griffith, who had come from Oxford. A delightful chap who was not only the surgeon with whom I then started to work but also became a very close and enduring friend until his death three or four years ago. So, for twenty-five years we worked together once or twice a week in neurosurgery and it was a very happy professional time, certainly for me and I like to think for him as well. We got on very well indeed. And undoubtedly it has always been a very firm belief of mine that patients benefit when they are being looked after by a surgeon and anaesthetist team who actually work well together.

WB Was that not common practice when you first went to Frenchay?

JZ Yes, I think it was quite common practice. It's been a feature of British anaesthesia, much more so than either in the States or on the Continent. But perhaps it is unusual and fortuitous, if you like, for a surgeon and an anaesthetist to become such close friends as we were. And partly because it was a sub-specialty within a unit which had got four surgeons we found ourselves working together at least two days a week whereas most of the anaesthetists would work with two, three or four different surgeons. And they may well work extremely well together, but this was a special relationship which I thoroughly enjoyed.

WB So, was that the pivotal relationship in Bristol or were there other members of the team who you felt were equally important?

JZ Oh no, there were certainly other members of the team and indeed there were other pairings if you like. There were three surgeons at least for my first fifteen years or so and the other two surgeons tended to have their regular anaesthetists, but it wasn't quite the same friendship-based relationship that Huw and I tended to have. And we never did, one might have expected out of that sort of relationship to have been very productive in the fields of research, but that was not so; partly I think because I've never had a great interest in research anyhow. And the research that Huw Griffith did, and he did do quite a lot, tended to be rather what I might call individual based research in the development of equipment and that sort of thing, rather than team research which is commoner these days.

WB And you struck up also a great friendship with Peter Baskett and he is a lifelong friend, isn't he? Was he very influential or did you bring about changes together?

JZ Yes. Peter Baskett was the first person I met when I went to Frenchay Hospital to look round before I'd been appointed. Well, I actually first met the head of department, a Dr Tom Wilton who sadly died a couple of months ago. Peter Baskett was a very new consultant there at that time and Tom Wilton asked Peter if he would look after me and show me round. We hit it off straight away. We developed a close relationship, a friendship which has survived as you have said to this day. We shared an office together for thirty years and it would be very nearly true to say we never had a cross word, despite the fact that he has always been a twenty or thirty a day man and I'm a non-smoker. However that was neither here nor there. But, in those early years Peter shared with me an interest in education. I had been hugely influenced by Pat Shackleton's efforts in the field of postgraduate education. It was his development of Primary FFA and later Final FFA courses in Southampton which undoubtedly were responsible for me eventually acquiring my Fellowship examination. And it seemed to me that what was good for Southampton would be good for Bristol. And Peter Baskett shared this thought and between us we set about developing a Primary FFA course in Bristol, and this was going to be based on the Southampton pattern of a one day a week day release course. We thought it would benefit all trainees in Bristol. We were a little disappointed in the early days to get very little, if any, support from our sister hospitals in the city, who felt that they didn't really want to spare their trainees to come out to Frenchay for a course and they were quite capable of training their own people on site.

WB There was actually considerable hostility to this idea, was there, or…

JZ I think hostility is probably too strong a word. I think it's truer simply to say there was lack of support. But it didn't last very long because there was sufficient exchange, communication exchange between trainees in Bristol for those at the other hospitals wanting to come on the Frenchay course to prepare them for their Fellowship examination. And that pressure gradually built up until, I suppose, within two or three years it became a course for all Bristol trainees. And from that it later developed into a course so that one day would be held at Frenchay and one day would be held at the Infirmary and one day would be held at Southmead, that's the third hospital in Bristol, thus satisfying territorial rights as it were. Later, and I'm now talking a lot later, perhaps some time in the '80s, it evolved still further and became a joint course with Cardiff which it still is. And so they do a week in Bristol and a week in Cardiff.

WB And is that now for everybody in the country or are there other centres where these courses are going on?

JZ No. Practical issues tend to decide where courses are held. For many, many years London has held Primary FFA courses and still does, and Final FFA courses. But as employing authorities were expected to pay the travel expenses of people attending these courses, it clearly became economically more desirable for travel to be kept to a minimum. Southampton went on having their courses. Birmingham began to develop their courses. I don't know the details of the rest of the country but there have been Primary courses up and down the country.

WB And what has been the main content of the courses?

JZ Well, the Primary courses the main content was the basic sciences in those very early years, this was anatomy and physiology and pharmacology. And then anatomy got dropped from the examinations, so to some extent the content of the courses was dictated by the requirements of the examination. And very recently, as the examination has continued to evolve and change so the preparatory courses have also evolved and changed. And really quite recently, in the last year or so, the Royal College of Anaesthetists has developed a written syllabus for its examinations which they had always declined to do in previous years on the grounds it would be too rigid and it would restrict the examiners. But they have finally given way to, I think, considerable pressure from both teachers and learners, so that now courses can actually be planned around the college's syllabus. And I'm sure this is the right thing to do.

WB Well presumably its now, the questions are now very much more technical perhaps than they used to be with the development of equipment and more advanced techniques. Are they more technical than they used to be? More specifically technical?

JZ No, I don't think that is really true. Anaesthesia has of course, as you have hinted, has evolved. What this has meant in examination terms is a broadening of the range of knowledge that trainee anaesthetists are expected to know. But there is still a huge stress placed, particularly perhaps in this country, on the basic sciences. Most of

the anatomy, not all of it but most of the anatomy has now gone, compared to the old days. But physiology is as strong as ever. Pharmacology is greater than it used to be, statistics has been introduced, clinical measurement is another topic that came in. So the range has increased but most of the old stuff is still there.

WB And so do you now get inquiries from all over the world about the courses, and from countries where they might perhaps be interested in establishing such courses?

JZ No, there has been very little, in my experience over the years, interest from overseas people wishing to come and study on courses in this country. There is an exception to that which is the courses that used to be held by what was the Faculty of Anaesthetists and now is the Royal College of Anaesthetists, the Final course - the course for the Final Fellowship examination - which was much more clinical with a very small component of basic science. This would attract some overseas candidates but even then not very many. And most of the overseas candidates are those who have managed to get jobs in this country, so although they may not be British graduates they are still doing their training here. But I think the cost problems would actually prevent a German trainee if you like from coming to this country to a three-week course and then having to go home again, especially when they have no examination as an incentive to make them want to learn.

WB And what about the surgeons? As you rightly say, surgeons and anaesthetists need to work closely together. Are the surgeons required to have an understanding of perhaps some of the content of your courses?

JZ Not really on… Well, how can I answer that? The surgeons do need to know quite a lot of the pharmacology and the physiology that anaesthetists need to know. But they tend not to learn it on the anaesthetically orientated courses, partly because it would not be very economic as it were for a trainee surgeon to come into a course where perhaps only forty per cent of the content was relevant to him. But the Royal College of Surgeons has of course been holding its own courses for the FRCS for longer, as far as I know, than the Faculty of Anaesthetists or the College of Anaesthetists.

WB So, are you now content with the range of courses available and content of the courses available or would you like to see further improvements on your original basic plan?

JZ No, I think our original basic plan… Or what would be more appropriate to call it would be Shackleton's original basic plan, because Shackleton perhaps really was the first person to introduce the concept of what today is known as structured teaching, and that has spread and has developed over the years. Structured teaching has been the backbone of the developments resulting from the report by the Chief Medical Office, the Calman Report, two or three years ago. And it has become even more structured than our first concept was, particularly the amount of time trainee anaesthetists now are expected to spend delivering an anaesthetics service compared to the amount of time that they spend learning. That ratio is gradually changing but *gradually* is the key term there because there are huge cost implications of drastic changes. You take out the trainee service element and you would decimate the

operative throughput in most British hospitals.

WB And during your time at Bristol, while you were establishing the courses and so on, you actually had an interview which took you off to Saigon for a quite different experience. Can you tell us about that?

JZ Yes. That was really little more if you like than an impulse. There was nothing planned. I didn't perceive it to be part of my training or part of my career, it simply occurred. I was having a holiday in Kent one summer doing a general practice locum, which I did from time to time to fill the coffers. And in the *British Journal of Anaesthesia* there was an advertisement from an organisation called Children's Medical Relief International (an American-based charity, for plastic surgeons, anaesthetists and nurses, and other grades, but those were the main three I recall) to go and work in a unit that was being built in Saigon to teach the Vietnamese modern methods of managing paediatric plastic surgical work. And I was interested by this, I'd never been to the Far East, I'd been to Copenhagen and that was about the sum-total of my overseas experience, and having a very understanding wife, she sort of said 'Well, why not? It would do you good.' And in due course I went off to Saigon in 1969. I had the blessing of the head of department at Frenchay, Tom Wilton. There were initially some financial problems, but in fact the charity was going to pay me the equivalent of what I was earning so I was able to go without NHS pay. This made it possible for Frenchay to employ a locum during my absence and that made it all quite possible. When I got to Saigon I was slightly taken aback to find that this new paediatric plastic surgical unit where I was supposed to work had not yet been completed. And the assembled team which was a motley collection of nationalities but with English as their common language were working in a converted, or two converted apartments, where one apartment had been made into an operating room, one into a ward, another room had been made into a recovery ward and so on and so forth. So, I waded in here expecting to do great things in healing war-torn and war-injured children. Not a bit of it. It was all so early in those days that no one had begun to solve the logistics of actually getting war-injured children to this undoubtedly expert team. What in fact we spent most of our time doing during my four months there was working on an enormous nation-wide backlog of untreated cleft lips, cleft palates and old burns. Those were our main three categories of patients, there were obviously a few others as well. But we could safely reckon on doing two or sometimes even three cleft lips or palates a day. And unlike the sort of experience I'd been used to here where we were dealing with babies usually under the age of two, there we were dealing with much older children; some teenagers, and one who managed to get herself classified as a child who was twenty-six who had an enormous cleft lip which had never been touched. And of course these patients and their parents were fantastically grateful. They tended to go about with their faces partially covered because they couldn't face the public with their deformity.

WB And you were really very successful at restoring these advanced conditions, were you?

JZ I'm not a surgeon so I can't give you a very truthful answer, but it's probably right to say that the cosmetic appearance of a cleft lip is more easily treated the bigger the patient. The cleft palates, I suspect but I don't have evidence for this, cannot be

treated so successfully in the older patients but it was rewarding work for a start. Satisfying, but it was also tremendously interesting and tremendous fun. Once we had got established there and the new unit was built and opened… And we would then travel the country and on a funny little American airline we would fly up to some of the bigger cities in the north of South Vietnam, obviously not into North Vietnam because this was all during the war. And we would go round local hospitals in places like Hué and Danang and Natrang and so on and the local doctors would show us any of their major problems. We began at that stage to see children who had been injured by enemy action as it were. Although usually not acutely so; they may have been injured three or four weeks earlier and were ready for a secondary repair. And we would select one or two of these and arrange for them to come back to Saigon for treatment.

WB And were you able to train, to do any training while you were going round the country?

JZ Not going round the country. The system we were supposed to be working was that the Vietnamese, the South Vietnamese minister of health had nominated two Vietnamese surgeons to train as plastic surgeons within this unit and one anaesthetist. Now the one anaesthetist, Dr Tong, was previously training to be a surgeon and he had simply been directed by the Vietnamese Ministry of Health 'You will go and learn to be an anaesthetist.' He was not a happy man. He didn't want to practise anaesthesia, he wanted to practise surgery. We struggled for a bit. But during my time there – I spent four months there – I was succeeded by Tom Boulton. Tom had had tremendous experience, much more than I had had, during the Malaysian, or the Malay conflict and he very soon saw the stupidity of trying to train a reluctant Vietnamese doctor to be an anaesthetist who wasn't interested. And [he] changed the emphasis to concentrate on what was happening up and down Vietnam, which was to improve the training of the nurse anaesthetists who were actually providing the service. So, for the rest of the time up until the fall of Saigon in '74 although the plastic surgeons continued, the Vietnamese plastic surgeons continued to be trained, it was anaesthetically the nurses on whom everything was concentrated. And there was indeed a very distinguished Vietnamese anaesthetist, the only one not to be in the services, a Dr Minh,[2] who ran the Nurse Anaesthetic Training School in Saigon. He ultimately got out of the country after 1974 and settled in America, and he wrote to me actually not very long ago. He is like me also nearing retirement, well I'm past it but I think he said he was going to retire next year. One other name worth mentioning during my time there, one of the other doctors besides Tom Boulton to have worked there was David Gray, Cecil Gray's son, and so I got to know him there. And he of course ultimately came home also and is now a consultant in Liverpool.

WB And I believe you also worked with lepers in Saigon?

JZ Yes. During those early weeks before the unit was open, we were really not able to fill our time in the converted apartment block, there were limitations, so that we were asked and we were able to accede to a couple of other requests. One was to do occasional clinics in our Red Cross refugee camp. Nothing to do with anaesthesia

[2] Dr Nguyen Khac Minh

that was, this was literally trying to run an outpatient clinic, more like a GP clinic. The Red Cross would give you a list of the available drugs for that day and you would prescribe or not prescribe. You would hand these out with a strict injunction never to hand out more than two days supply to any patient or they would sell them on the black market. But, as you said, we also were invited to go to a leprosarium – to give it its proper name – there, run by a Vietnamese doctor, a Dr Thu. He had a number of patients. One of the features of leprosy is destruction of the nasal bones and they get a very characteristic appearance. You can spot them a mile off, as they get this tremendous sinking of their nasal bones. And we would occasionally go there to one or two of the patients who had got a very gross deformity like this and put a bone graft in the nose to restore their face more or less to normality. And once again, rather like the patients with the cleft lips who would walk about with their faces covered, the lepers felt they could once more face the world because they weren't instantly recognisable as lepers. They could cover their hands fairly easily but it's more difficult to cover the bridge of your nose if you want to see where you're going.

WB And you had all the right equipment and operating conditions to do these quite complex operations?

JZ Yes. We were supplied… Of the surgeons that we had there there were two American surgeons and there was one Australian surgeon, but because it was an American funded charity we had direct access to American supplies and were able to get more or less what we needed or what we wanted. The drawback to this of course was that the initial plan was that we would train our Vietnamese opposite numbers in Western techniques. But if we trained them in such a way that they became dependent on Western goodies then we were going to leave them in the lurch after we left. That partly applied to surgery, although not much is required for that sort of surgery other than basic instrumentation which wasn't too difficult to obtain and could be long lasting. It was much more difficult in the anaesthetic field and shows the great wisdom of Tom Boulton in abandoning what had been going on before. Which was giving modern anaesthetics with modern anaesthetic machines provided by the Americans, and moving towards nurse based anaesthesia using much more basic equipment that they would be able to manage and for which they could get the appropriate drugs after the unit had closed.

WB So how were they at administering anaesthesia, the nurses?

JZ The nurses were partly using the good old technique founded by Sir Robert Macintosh here, the EMO inhaler. And in fact I visited… Our little plastic surgical unit was built in the grounds of a hospital, a Vietnamese civilian hospital in a part of Saigon called Cholon and I would sometimes go in there where I was also able to use EMOs. I probably wasn't as good at using them as they were, but it was still quite good experience. I'm not sure that I ever used them before I went there.

WB Oh really. Not even in your early days?

JZ I might have done perhaps, but I can't really remember now. But … I probably had done.

WB Does it make you feel that there's a case for nurse anaesthetists in this country or elsewhere in the world, that we might make more use of…

JZ That's an extremely thorny problem because the place where the question has to be asked mainly is in Africa. There is a huge shortage first of all of physicians throughout the continent, and those who do come out of African medical schools wish to go into a specialty which will provide them with a decent income because government salaries are very low. Now, there is a better income to be made in obstetrics, in paediatrics and in internal medicine. But for an anaesthetist your income becomes totally dependent on your friendly surgeon, so not a lot of interest in newly graduated African doctors in going into anaesthesia. So throughout most of sub-Saharan Africa what we tend to call 'non-physician' anaesthetists rule the roost, well not rule the roost, I don't really mean it in that sense, but they provide the anaesthetic service. I use the term non-physician anaesthetists because some are nurses but some are what they call clinical officers, sort of A-level students who have had a two or four year training in basic medicine and can then take up a, quote, 'specialty' such as anaesthesia. This is not a solution that appeals to other countries in the world because South America in particular has spent many years in abolishing nurse anaesthetists to ensure that anaesthesia remains a medical specialty. And they are not at all enthusiastic to see other countries developing nurse anaesthesia because there are economic benefits. There are probably no health benefits, but there are economic benefits and they are obviously worried that their own economists might wish to try and bring them back into South America. In the United States where they have had nurse anaesthetists for years there is a strong movement against them from the American Society of Anaesthesiologists, all physicians, but there is a very powerful nurse anaesthetist organisation. And Scandinavia which is the other place where they have had, and Holland where they have been used a great deal, are trying to, with some success, to relegate the nurse anaesthetist to the assistant role so that they work very much under the supervision of anaesthetists. It is a thorny problem.

WB I was going to say, what about this country?

JZ Well, in this country it keeps being muttered down various closed corridors from time to time. I think even in this country, if it was handled correctly… By which I mean there is this phrase that gets bandied around – 'the extended role of the nurse'. They have these people known usually as nurse practitioners working for instance in accident and emergency departments, where they may be trained to do simple suturing for example or just simple X-rays for example. I think this is an entirely proper development but it has to be based on good training and good supervision. I could be convinced in this country that the role of the anaesthetic nurse, rather than the nurse anaesthetist, who could develop responsibilities for assisting anaesthetists, for monitoring the patients… But I do not see a role in this country for nurses being trained to give anaesthetics *instead* of anaesthetists. Indeed, if that were to be the case and if proper supervision was to be maintained I believe it would be a more expensive development than sticking to doctors.

WB But as things stand it could provide a very valuable support to the maiden anaesthetists who are very, very busy.

JZ Absolutely so, and in some hospitals this is happening. I mean, even in my own hospital, the Frenchay, where we have very good anaesthetic nurses, we train them to perform certain techniques partly to give them job satisfaction. But that's not the same as allowing them to do our work for us in our absence and I don't believe that is a practical possibility.

WB Coming back to Frenchay after your time in Saigon, did you find that your ideas had changed much after this experience?

JZ I don't think my ideas had changed very much, but it had certainly fuelled my interest in what was going on elsewhere, and inevitably of course I gave one or two lectures about this. I would talk fairly freely about my experiences there, I would link it to my experiences with the WHO course in Copenhagen. So that… I was in Saigon in 1969 and when I came back I resumed my position on the council of the Association of Anaesthetists. And I think it was probably later that very year when there was a forthcoming meeting of the European Congress of Anaesthesiology scheduled to take place in Prague. Prague at that time of course was still a communist country. And at one council meeting - the Association was expected to send a delegate – council were asked by the president, John Beard, if anyone wanted to go. And not really knowing what was entailed but having had my appetite for travel whetted I put up my hand. And Peter Baskett also managed to acquire his own support and the two of us actually both went to what was our first international congress in a very grey rather forbidding city. I think we've all been coloured by books we have read and by news and so on that, my goodness me, this is a communist country sort of thing. In fact I remember Geoffrey Organe – he also came to that – feeling the same. And it was an enlightening experience. There isn't time for me to go into the various details of what happened there but the most important thing that happened there for me, and I think probably for Peter, was meeting people. We met influential people as well as more ordinary delegates if you like from various parts of Europe. It didn't attract many people from countries beyond Europe, there were a few. But that was the first of many congresses that Peter and I and our wives have attended together over the years and they've been very formative.

WB So, this led you to an increasing interest in world anaesthesia and anaesthetic politics, if I can put it like that.

JZ Very much so. In a way the Association of Anaesthetists, getting on to their council, was a very important stepping stone for me onto the slightly broader scene.

WB How did that come about?

JZ Well, the next thing that happened after Prague, in fact two years later there was a World Congress of Anaesthesiology in Japan and once again I think, I know I went as an official delegate of the Association. And to reiterate my theme of the value of meeting people… Peter Baskett came with me there and during that congress, our first visit to Japan, one of the people we met was a man called Dr 'Pepper' Jenkins who was the head of the department of anaesthesia in Dallas in the States. The most delightful proper Southern gentleman is the best way I can put it. Pepper, everyone loved Pepper. But we were sitting chatting somewhere in their magnificent

conference centre and Pepper said 'Well, I like to have British visitors, come and spend some time in my department. Why don't you come?' And in a couple of years later I went and spent a month in the department of anaesthesia in Dallas, and a couple of years after that Peter Baskett did the same. So, one gradually began to build up this circle of friends and acquaintances, and I don't awfully like the word 'contact' because they were much more friends than acquaintances. Not so long after that came another European Congress in Madrid. And the only real reason for mentioning Madrid is that the World Federation had, still has what was known as the European Board that ran its European section and in Madrid I was fortunate enough to be voted on to the European Board. This gave me a little bit more insight into the workings of the World Federation as well as its European Board. Again, I met several new people who became lifelong friends, one of whom was the senior French professor of anaesthesia, Professor Jean Lassner in Paris. We got on very well. Two years later again in '76 the World Congress was in Mexico City and Professor Lassner came. There were a lot of British anaesthetists there, including Michael Vickers I remember particularly, and Lassner got some of us together and put up his proposal to create a European Academy of Anaesthesiology. We all supported this. He perceived this as really a research group, something on the lines of an existing organisation in the UK, the Anaesthetic Research Society. And at the next European Congress in 1978 in Paris we formally founded the European Academy and I was inevitably one of the founding members, having been in on those early discussions. And some of the British people, myself included, as well as seeing the research potential of such a group also began to perceive such a group as perhaps having a role similar to that of the Faculty of Anaesthetists in this country with an interest in training.

WB And also perhaps with pulling together different strands of anaesthetic practice and getting the best from them all?

JZ Yes, I think so. We, all of us, including Lassner, were well aware that there was a huge variation in standards of anaesthesia in Europe and there were some countries where one would much prefer not to have an operation.

WB Yes, you must warn us about that some time!

JZ To some extent that may even be true today but the number of countries I think are rapidly diminishing where one would prefer not to have an operation. I began then to think well if our faculty can run an examination… I began as it were to work out for myself, I don't think I had thought about it clearly before that, the advantages of an examination over and above testing knowledge. The advantages of acting as an incentive to learn, the advantages of having a promotional hurdle if you like so that if you got the exam you get a better salary than the chap next to you who hasn't got the exam and so on. So, with some nervousness I began to write a proposal to develop a diploma examination for Europe under the auspices of the Academy. I had some quite strong arguments with one of my German colleagues there who was very much in favour of the idea but was quite sure that it should be entirely in English. He took the rather purist, academic view that the majority of anaesthetic literature is all in English and all the major meetings tend, are all, a lot of them are in English and if you didn't speak English you weren't going to progress very far. I took an opposite view that if we did not try and make this a multi-lingual examination we wouldn't actually have

any influence in those countries where English was not widely used. In the end my German friend found other things to occupy him and I proceeded, so that in 1984 we held the first Part One, which was a multiple choice question examination for our new European Diploma. And we held it, the very first one was in four languages, English, French, German and Spanish, and then we added Italian a year later. The very first exam attracted one hundred and ten candidates I can remember, because we were never quite sure first of all, and to this day I don't think I really know why they took it. It meant nothing, we could give them no guarantee that even if they acquired a Diploma it would do them any good and I used to describe this one hundred and ten as a sort of curiosity figure. Here was something that might cause a number of people to say 'Oh, let's have a go and see what it's like.' The following year that one hundred and ten fell to I think it was about thirty-five and one got a little bit depressed, but as they say we hung in there. And now, twelve years later, we are getting nearly four hundred candidates a year to the Part One. A smaller number to the Final part, which is all oral examinations, because they can't take that until they have passed the Part One and the Part One has about a fifty per cent pass rate.

WB Do you have any idea what proportion that is of the people who could go in for it?

JZ I don't think I do. I know in very approximate terms that there are somewhere between forty and fifty thousand anaesthesiologists in Europe, that includes the UK, and that's all of them. We have recently, we… Colleagues have recently tried actually to do manpower calculations for European countries, both to see how many anaesthetists there are and also to see how many we need. It's a phenomenally difficult task because anaesthetists in some countries do a huge range of tasks including pain relief, obstetric pain relief, intensive care, sometimes emergency medicine, resuscitation, in other countries they do less and those jobs are done by other people. A paper has recently appeared about this but I think the correct term is it is very 'soft data'.

WB And have the qualifications now become portable in that somebody who was, say, Spanish who had achieved this…

JZ To an extent. What is beginning to happen, and what was always hopeful, well two things have begun to happen. First of all, the initial fail rates in the MCQ were quite high and they were largely on the basic science – I hinted earlier basic science had not been well taught in many countries – those fail rates have gradually fallen. Or to put it another way the pass rates have increased. And at least one other reason, and we do have evidence for this, is because candidates who wish to take the exam are demanding better instruction in the basic sciences. So that was one object if you like that has been achieved. Secondly, Switzerland who already did have a national examination, being a trilingual country had had great difficulties in running their MCQ and so they have adopted the European Academy's MCQ as their national Part One. They still hold their own Final Part Two oral examination. But in practice the vast majority of Swiss candidates now take both because they perceive the European Academy's exam as being a better passport perhaps to working in other countries, particularly in Germany. That's beginning to catch on a little bit. Norway and Sweden are trying very hard to make the European Diploma a mandatory part of

their training programmes, but there is a tradition throughout Scandinavia *against* any postgraduate examinations at all and the junior doctors' associations are putting up a tremendous fight. So far they have managed to prevent any examinations being made mandatory, although Sweden in particular on a voluntary basis is producing quite high numbers every year. France also has a tradition not only of not having postgraduate examinations, but certainly of not paying for any part of your medical education and we get no more than a handful of French candidates every year. And that is unlikely to change until employing authorities begin to show preference to candidates who have got the European Diploma. And this is what has begun to happen in Germany in quite a big way. Because Germany has more qualified specialist anaesthetists than it has jobs, it's become increasingly important for the specialist anaesthetist who wants to get in the job market to have the European Diploma. Germans now provide our biggest single cohort of candidates every time and in fact we had nearly a hundred German speaking candidates last time. Not necessarily German, we do get quite a few Austrians and as I've said a proportion of German speaking Swiss. Next year we expect Austria to adopt the Part One as their national examination as their government has now decreed that all medical specialties shall have compulsory postgraduate examinations. So, it takes a long time but there is a fairly steady growth pattern going on.

WB Clearly an impact has been made on standards that you must be very proud of.

JZ I'm pleased at the way things have gone and I don't think it is going to stop there. I think I have two other sort of irons in the fire at the moment for the future. One is I am exploring the possibility of what I have called an add-on diploma in pain management. This has become a field for anaesthetists over the last twenty years, I suppose. And although it is a field where neurosurgeons and psychologists and neurologists also have an interest the people who mostly do what you might call the hands-on management of patients with pain problems, the people who run pain clinics throughout Europe, are very largely anaesthetists. And yet there is no qualification to say 'I am a pain specialist'. And in fact one of my Norwegian friends wrote to me in support of this concept a little while ago and said 'At the moment in Norway any anaesthetist can put up a plate and say 'Pain Specialist'.' And that is not good for the public and it is not particularly good for the image of anaesthesia either.

WB So, you would conceive this as a totally new and separate diploma taken after the first two parts?

JZ Probably. It's very early days. It's at discussion phase and I'm not a pain specialist myself so I am having to take advice from quite a number of pain specialists in different countries including in this country and including from the council of our college. But my present perception would be that for those anaesthetists who already have the European Diploma there would be a subsidiary examination. If you like somewhat less exhaustive because they will have done the basic science very largely, the subsidiary examination perhaps taken the following year with its own MCQ component maybe and almost certainly its own oral examination in pain. Now, I say that would only be open to those who already have the European Diploma, but an option of course would be it could also be open to those who have an English or an Irish Fellowship, because there is no comparable diploma in this country either. So,

that's one other iron in the fire. The other one is intensive care. This has been growing ever since, if you like, the poliomyelitis epidemic in '51. Our college is already, in conjunction with the Royal College of Physicians, exploring some form of joint examination board to set a diploma examination in intensive care for the UK. And I would not wish to try, and there would be no point in competing with that. But that will virtually only affect this country. There is a European organisation called the European Society for Intensive Care Medicine. They do hold their own diploma examination but they do have, I know, considerable problems with this. And a little while ago I met with the chairman of their examination board. And we discussed the option of the Academy and their Society forming a joint examination board and perhaps developing a European Diploma in Intensive Care jointly which would be open not only to anaesthesiologists, because in Europe many people from what they like to call internal medicine also go into intensive care. So, there is a certain amount of careful planning that has to be done and delineating of what sort of training programme would make you eligible to take what might be a new diploma. That will stop me from getting bored for the next year or two.

WB Well, this is a slightly ignorant, a very ignorant question, but why do you separate intensive care from the management of pain? Do these two not overlap usually?

JZ No, they don't overlap really for one or two reasons. The reason I separate them is because in introducing some form of qualification in either, in pain I think we would, I think it would be quite possible to introduce a qualification for people who have trained as anaesthesiologists. In intensive care you need to cater for people who have also trained certainly in internal medicine and at least theoretically even in surgery. There are a few surgeons who give up surgery and go into intensive care, their numbers are fairly small, but if you like on sort of egalitarian terms it needs to cater for more than a single specialty. So they are separate from that point of view.

WB Now, you have been very used obviously to patient lobbying, to setting long-term goals and seeing them come to pass which is obviously very satisfying for you. Can you describe other events in your long association with the College or with the World Federation perhaps leading up to your presidency of the World Federation in 1988? Were there milestones along the way in what you saw being achieved or standards changed?

JZ Yes, I think there's one thing that I at least would like to refer to. When I first… Well let me go right back. When the World Federation was founded in '55, it had twenty-six societies, it had virtually no money. There was a small subscription from each society, and there was just about enough to pay a typist occasionally to type a letter, it was that sort of scale of organisation. By the time I got involved - I became its secretary in 1980 - we had somewhere around, I can't remember the precise figure, seventy odd societies and quite a lot more money so that we were able at least to run our administrative work fairly effectively. But it wasn't *doing* anything. During the '80s this began to get discussed fairly freely. The income was not too bad, we had an education committee, we had produced one or two small booklets, educational booklets, which we would distribute. Towards the end of the '80s, we just about got into the mid-'90s, the income going up accordingly, and indeed the last figure I heard

at the last World Congress in Sydney, I think there are now about one hundred and twenty member societies. Now the development that I referred to was, it was somewhere around the mid-'80s, '87 I think it was. I had gone to a meeting in Nairobi and we'd gone on to Tanzania, to Arusha, to a small meeting of the East African Society there. And I can remember sitting on a veranda with a large tankard of beer in front of me talking to one or two of my friends - one was an Irish anaesthetist working in Tanzania and one was a Tanzanian - saying 'This was quite a good meeting but it could have been done so much better. Why doesn't the World Federation organise and help to fund a refresher course?' So, the following year I wrote to, I don't know, a dozen, maybe more European societies and said 'Would your society fund a lecturer to go to a refresher course in Nairobi?' I got five or six saying 'Yes, okay.' That early meeting was '86 because the first refresher course we held in Nairobi was '87. We had lecturers, sponsored I suppose is the word, from half a dozen European anaesthetic societies and it really was enormously satisfying. We had a good audience, a mixed audience, of some African physician anaesthetists, some nurses, some of these people I mentioned called clinical officers.

WB How many people came?

JZ We had I suppose about a hundred with *unlimited* enthusiasm. A close friend of mine, an anaesthetist at Gloucester Royal Hospital, Roger Eltringham, was as it were my right hand man in this. He did a great deal of the spadework and much of the chairing of the meeting there, and I have to mention him because he went on to become a member of the education committee of the World Federation. And to some extent he became 'Mr. Refresher Course' because that '87 course was the first one of I think about three that we held all in East Africa. But then the concept began to grow and they began to be held in other parts of Africa. And then in '91 I developed that idea a little bit further and with the help of a good friend of mine in Moscow, a lady called Professor Elena Damir, we said 'Well, why don't we have a refresher course in Moscow?' And I used the same technique of asking Western European societies if they would donate a speaker and we had a Frenchman, and we had a German and we had a Spaniard and we had one American who funded himself. And Professor Damir made the necessary local arrangements. There was one, I have got time perhaps to mention one amusing little episode because I was worried about language. Moscow did not then and still does not have facilities for simultaneous translation. And my friend in Moscow, Professor Damir, said 'Well, I think we'll probably manage because there are quite a lot of English speaking people and they are the ones who will come.' She was expecting between thirty-five and forty she told me. We had four hundred and fifty people turn up from all over what was the Soviet Union in this big hall that she had managed to get for the occasion, and I was sitting behind one of these long tables on the stage listening. I was a little bit put-out by what I took to be the rudeness of the audience who seemed to be talking throughout the lecture until eventually when I looked very carefully, they were all in twos and threes. And every two or three had got one English speaker and two Russian speakers and simultaneous translation was as it were going on all round the room. That again has started a sequence of lectures, again largely with the help of Roger Eltringham. There have been two or three now in Moscow, there has certainly been one in St. Petersburg. There's been one … oh goodness me, I can't even remember the name of the place, but not far from Vladivostok, right over on the Eastern side of the country …

Khabarovsk. That generated enormous interest. No one had ever gone to that part of the Soviet Union on a medical teaching mission. So we are now, you see, beginning to use the increasing income of the World Federation for the purposes that it should really always have been used, but there wasn't enough, which is educating the world in anaesthesia.

WB Do you feel that standards are now becoming more level?

JZ No. I think it would be arrogant really to pretend that was the case. I think knowledge levels are improving, which isn't really quite the same. It is desperately difficult to measure how an improvement in a knowledge level will improve a standard. But the contacts that we have established have led to much more movement, particularly I might say of Russian anaesthetists. There are now at least six young Russian anaesthetists in the UK, three of whom have not only got the European Diploma examination but have also taken their English Fellowship, but are working in British hospitals. That's what will alter standards when they go back, although, one has to add, if they go back. And this is one of the huge problems. We have faced it before and we still face it in Africa. Every time you bring a Nigerian or a Kenyan or a Tanzanian for training in this country he begins not only to learn Western techniques, he begins to live on a Western salary. And they become increasingly reluctant to go home and many of them don't.

WB Do they find jobs easily in this country?

JZ They can find training jobs without too much difficulty in this country, not easy but that can be achieved. But the work permit regulations means officially they have to go after four years, but I know that there are a few loopholes which do get exploited from time to time. It is a very, very difficult problem. And as far as Africa is concerned, I think most people working in the anaesthetic educational field now believe it is probably better to try and take the education to the people in their own country. And indeed African governments… One of the reasons they are so - what's the word I want? - enthusiastic isn't quite right, keen on developing their own cadres of health workers, what they call clinical officers, is they train them. They give them some form of qualification which is only of any use in their own country. They cannot go and work in an Arabian country or the UK or the States or anywhere else, so they do actually get the benefit of the training that they've given these people.

WB Now, you had a wonderful career with the World Federation and you became president in 1988. And I believe your local paper carried a headline which said 'Doctor Zorab - President of the World' which must have given you some amusement and I hope satisfaction.

JZ Well, it gave Peter Baskett a good line on one or two times that he has introduced me for this that and the other.

WB But … do you feel that you achieved all that you wanted to achieve at the World Federation, as president, or are there still things that you would like to see put in motion for the future?

JZ There are lots more things that, first of all, I would like to have done were I twenty years younger if you like and still involved. I enjoyed my time most with the World Federation between 1980 and 1988 when I was secretary. At that time, the secretary has a very, oh what's the word I want, influential role. You can *do* things as a secretary; you can have ideas, rather like these refresher courses. It seemed a good idea, I talked to my friends, the machine was there, I could use the machine and I could do it. Once I became president I found I was a figurehead, no more. I sometimes got a free fare to a nice part of the world; I got looked after very well when I got there. But there was very little that you could do in the way of doing. This was now being overtaken by other people who had moved up. I'm not saying that's wrong, I'm just saying that it was in some ways less enjoyable and from my point of view less constructive. I'm not a presidenty sort of person. I much prefer a role where I can make an exam, run a course, organise something.

WB You obviously were, and are, a great organiser. You've been an examiner for the Diploma and you were, I think, director at Bristol?

JZ I was medical director at Bristol. I've certainly enjoyed organising much more than leading, if that's the right word. I've preferred to let others do that. To some extent, I'm not sure that Geoffrey Organe wasn't the same. He was the first British president of the World Federation and he was the first British secretary, in fact, so that I was actually proud to succeed him in both roles. Amongst the things I learnt from him was that, I suppose you might say its the art of leading from the back. You can actually get on and do things as long as you don't get bogged down as it were with figureheady type roles.

WB That's a very useful lesson.

JZ It was a good education and I've also, you see, been surrounded you see by such an enormously supportive cast, if I can put it like that. Starting with names that we've talked about here, and with Tom Wilton at the Frenchay in particular who was head of that department, I must have been a pain in the neck to him at times. I remember once after I'd been appointed another vacancy came up and Peter Baskett and I looked over all the applications and we said 'Oh, that's the chap we want to have, Tom. Let's appoint him.' And he said 'Oh no, no. He will be another organiser. Let's for goodness sake appoint someone who will stay here and give anaesthetics.' But in fact Peter and I got our choice!

WB Oh, but then you were right, I'm sure.

JZ Yes, we were right. Yes!

WB You've turned a certain amount of initial failure, if I can put it like that, into a huge and ongoing success. You've had a career that's really helped the world in the long term. Looking back, what has given you the most satisfaction? Is there any one, or two particular things?

JZ I think probably the European Diploma. I would like to think that that will have more far reaching effects and hopefully affect more people in terms of both

patients and trainee anaesthetists than anything else that I've had to do. And I think it's partly because of that feeling that I'm really quite enthusiastic about extending that into the field of pain and intensive care provided I have time to do it. It's an unkind thing to say but last August when the chairman of the examination committee of the Academy for personal reasons had to resign, I was very pleased to be asked if I would move back into the chair, which is what I'd done for ten years. Because, rather like being secretary of the WFSA [World Federation of Societies of Anaesthesiologists], once you're chairman of the examination committee you can actually get on and do things.

WB And what do you perceive needs doing in that respect or is that a tactless question at this point? You may not want to reveal what you think needs doing.

JZ Well, mainly the things I've already talked about, the pain diploma and perhaps the intensive care diploma. There is something which is rather more nebulous. I'm 68 soon; I'm in many ways fortunate to be here anyhow. I had a cardiac arrest in '89 and I got away with that, I had another heart attack in '94 and by-pass surgery, we're all mortal. But the nebulous thing that I want to make sure of is that I've got the European Diploma organisation sufficiently stable with the right people in the right slots so that it wouldn't matter if I'm not here tomorrow. That is something I have actually been working quite hard on over the past six months or so, finding someone else as it were to run the MCQ examination. Which has until now been done virtually single-handedly by a colleague of mine, Peter Simpson at Frenchay, who was an absolute master at it. But he has done it for twelve years and I'm hoping, and I think I have laid the ground-work, that he will take over from me as chairman of the examination committee. I've got a German colleague from Regensburg in Germany who literally a couple of weeks ago has accepted the role of taking over the MCQ work, we're in the process of upgrading our London office which is the sort of focus from which it all has to happen. These things all want to be in place and stable before I leave the scene, and in fact my greatest anxiety at the last heart attack was 'Oh my God, will it survive?' And thank God it did, and thank also all my friends and colleagues who ensured that it did survive. In particular I have to mention one other name, John West. John West is the director of examinations for the Academy. He used to be the assistant examinations secretary at the Royal College of Surgeons and when, I told you we started all this in the early '80s, I went up to him at lunch one day and said 'John, would you be interested in helping me start a new examination?' And it really started like that. He's devoted an enormous amount of his time for very little return in setting this up and he, and Peter Simpson and one or two others, it was who kept it going while I was ill.

WB Well, one of your attributes obviously has been that you are a great picker of people and that you have all these friends who are going to still be friends in your retirement.

JZ I think I'm just very, very lucky to be surrounded by such nice, helpful people. All whom, they may have been if you like my ideas in the first place, but all of whom have thrown their hearts into developing something that I wanted to develop. That is hugely unselfish on their part.

WB But it's been of great benefit I'm sure to them as well as to you.

JZ Well, I hope so.

WB We're coming to the end of our session. I hope you have a very happy retirement. It sounds to me as though it is going to be extremely busy, but I wish you well in the future.

JZ Thank you very much.

WB It's been very nice to meet you.

JZ Thank you.