Prof. Sir Ian Diamond

Interviewed by

Jane Bird

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Via Zoom

Welcome to the Archives of Information Technology where we capture the past and inspire the future. It's Tuesday 11th January 2022 and we're talking on Zoom as has become customary during the coronavirus pandemic. I'm Jane Bird and I've reported on technology and the IT industry for newspapers such as The Sunday Times *and the* Financial Times *since the early 1980s. Our contributor today is Professor Sir Ian Diamond, the UK's National Statistician, the principal adviser on official statistics to the UK Statistics Authority and the government. Sir Ian's responsibilities include the development of statistics across government, supporting compliance with the statistics code of practice and advising ministers and other senior officials on the production, dissemination and use of statistics. Sir Ian also has a strategic oversight of the Office of National Statistics, the ONS, and promotes UK interests in higher standards in statistics across the world, presumably computers and IT have a key role to play in fulfilling these many responsibilities. Sir Ian, welcome. I'm very much looking forward to hearing more about your life, professional experiences and insights into the world of statistics and how they influence politics and society.*

Good afternoon.

So, if we could start at the beginning. You were born in March 1954 in south Devon, I think.

That's right, in the village of Kingskerswell.

So was yours a happy childhood?

Oh yes, very much, and one very much where education was at the heart of what everybody was achieving.

Because your parents and your grandparents were not highly educated, were they?

No, no, no they weren't. I can't speak for my grandparents, but my parents were not highly educated at all but had a great regard for education and did everything they could to enable education for my brother and myself.

And you were presumably educated in the state system, were you?

Yeah, very much, attending Torquay Boys' Grammar School.

So you'd taken the eleven-plus, presumably?

Yes.

Was that, presumably that was a good experience as you passed?

As much as I can remember, yes.

Do you think, so was schooling, did you love school, did you work very hard, did you do very well? What was your experience?

I think the answer would be, as with most people, it was mixed. I mean I thought the school was great. Did I always work hard? I would have to say no. Did I also spend time playing sport? Yes. But was I inspired by some very good teachers? Unquestionably.

I mean who would you pick out, thinking about those early influences on your life? Which teachers, which subjects, which schools?

Well, I'd certainly point to many teachers who inspired me, particularly in mathematics, where I enjoyed both the teaching and the subject very much. I also recall enjoying history very much, and it was indeed a history teacher who gave me some extremely good advice that if I was going to go to university I should go to the London School of Economics, and that I think was one of the best decisions that I made, and that advice is something that I've always remembered.

Right, yes, because that's where you went first of all, to LSE, directly from school.

Sure.

Yeah. And what about your family life? Did you have a close relationship with your parents, with your brother?

Yeah. No, no, we were a very close family, had a really good time. My dad sadly had a heart attack when I was about fourteen and after that was very disabled, I think is probably the fairest way to say, but it was a great family life, yeah.

So they encouraged you. I mean did you, you mentioned sport, was that a big part of your life at that time?

Yes, yes, I played every sport that it was possible to do. I particularly enjoyed playing rugby and cricket, but I played many, many sports and I enjoyed taking part in sport in every way.

[0:04:54]
And it was a rural childhood, was it? I mean south…

No, no, no. I was brought up, you know, I was born in the village of Kingskerswell which is about a mile outside of Torquay, and we moved to Torquay when I was about two years old and I was brought up in Torquay which is a holiday town and at that time, which we should remember was ahead of package tours in the main, was one of the major holiday centres for the whole of the UK.

So it was thriving, basically, presumably?

Oh yeah. No, it was thriving with many opportunities for employment, be they in the summer holiday or any other time, and much more so than the coastal towns of today where the move towards, particularly before the pandemic, international travel has, I think, impacted pretty negatively on the wellbeing of the populations of coastal towns. Something that the Chief Medical Officer, Chris Whitty, has I think observed and taken on board in his recent report on the public health of coastal towns.

Yeah, and presumably statistics have quite a key role to play in highlighting that sort of problem?

Unquestionably.

So, to go back to your childhood though, so did- and what about computers, I mean I suppose they were kind of enormous machines that whirred away in air-conditioned rooms?

I'm afraid I'm quite old and computers would have been a complete mystery to me, there certainly weren't any computers in any of the schools that I attended and indeed it was only towards the end of my undergraduate career that we used computers. There was a mainframe at the London School of Economics and I remember during my second or third year at the London School of Economics having to learn Fortran and to write a Fortran program, but we never actually used computers in analysing data at an undergraduate level. Indeed, there was a big room full of hand calculators that one could book a place in if one had a decent amount of calculation to do.

Wow. So that's leaping ahead a bit, I suppose, because if we- so for your A levels then, you did presumably science topics, did you?

Yeah, and I did maths, further maths and economics. I had always had an interest in – I've no idea why – but I had always had an interest in the social sciences, and in particular in the way in which surveys helped us to understand populations, it was something I'd always been interested in, although I could not for the life of me tell you why that should have been the case, and that led me to do A levels in maths, further maths and economics.

Yeah, I suppose geography would have been another subject that could have covered those sort of things?

Yeah. No, geography would have been very much, and I did an O level in geography that I did pretty well in, but at that time, interestingly, a lot of geography was physical geography and while I absolutely love the outdoors and the hills and things like that, I wasn't much attracted to physical geography.

Yeah. I mean you, that love of the outdoors, I mean being in the countryside or even when you were living in Torquay, I suppose the countryside was pretty close by, did you spend a lot of, were you able to be quite independent, roaming…

Well, yeah. No, certainly independent. I mean certainly Torquay is ideally placed to go either to the coast or to Dartmoor, and I was a great fan of both those places.

So, and what about, did you do jobs? You mentioned holiday jobs, so did…

Yeah, I mean everybody did holiday jobs. One worked as a waiter, one worked as, there was a lot of foreign students who would come and live in houses in the town and get lessons in the morning and so on, taught some English. And one, I also worked in refuse disposal for a while, so you know, lots of different holiday jobs when one was a student.

Yeah, so you had, it wasn't your first experience of the working world when you left university then?

No, anything but.

[0:10:46]
Yeah. I mean did you feel there were financial constraints at home, did you feel you needed to go out and earn good money to support yourself or the family or…

Yeah. I mean I would never say there were financial constraints. I mean, you know, in those days one got a maintenance grant, which I qualified for under the means test, and that was, I'd have to say, enough to manage during the termtime, and one, I mean it was just the norm, I mean it wasn't kind of something that one thought about, you know, you just got a job and that enabled you to do things in the summer or at Christmas because you wouldn't have any money any other way.

Yeah, yeah. So you arrived then at LSE to study economics. Was that, I mean had you got good A levels?

Yeah, I got reasonable A levels, not crazily good A levels, but I did reasonably well and I think it's worth saying that the London School of Economics in those days, maybe even now, admitted most undergraduates to what it called the BSc Econ, and then within that BSc Econ were a number of sub-categories and so while I cannot, for some reason the number 320 sticks in my brain, 320 people were admitted on to the BSc Econ and then, you know, shall we say, twenty people were admitted on to statistics, twenty people were admitted on to government, twenty people on to economics, you know, so that there was, while it was a BSc Econ, you spent most of your time doing the different, well, whichever was your specialisation. During one's first year there was a requirement to take some economics, but – and one of the great things I also enjoyed was during one's second and third year there was a requirement to take some courses from outside of statistics. But the great majority of the work I did at London School of Economics was statistics.

So that had… when do you first remember getting interested in statistics then?

You know, that's a really good question and I just know that I was always, I always found it really super-interesting and maybe sometimes not knowing that it was statistics, but numbers excited me and understanding numbers excited me, whether it was a league table or whether it was just a cross-validation, and so I had always found that fascinating and that led me to doing statistics. And again, perhaps without knowing too much at that time about what that really entailed. I think our information for potential students is much better now than it was then, but certainly I enjoyed every moment of my undergraduate career.

And that was focussed on statistics within the confines of the economics degree?

Sure.

Yeah.

Sure.

[0:14:26]

Yeah, yeah. Okay, so then, and then you obviously chose to do an MSc and then to do a PhD as well, so…

Yeah, I did the MSc… yeah, no I did the MSc because I did feel at the time that the undergraduate degree was brilliant and I'd enjoyed it very much, but that in order to really become a statistician I needed some more knowledge and a Masters was the way to go. I stayed at LSE for the very simple reason that looking at other Masters courses, which I did, LSE was the closest one to where my interests were, which was in applying the statistics to the social sciences and being able to do some courses in demography, some courses in social surveys, some courses in social statistics was something that attracted me greatly and that's why I stayed at LSE and it was a great Masters that I enjoyed very much. I wasn't quite sure what to do, I'll be honest, after doing a Masters. At that time many statisticians, some of the most famous statisticians in the world had gone from a Masters degree into a research assistant's job and had done, published a whole series of papers as research assistants and that was a potential opportunity. But I remember one of the many lecturers at LSE, who I got on very well with, a man called Colm O'Muircheartaigh, I remember him saying, the world's changing, Ian, and I think if I were you I'd get a PhD. So I was thinking about doing a PhD without really having an enormous vision of what exactly I would work on, you know, I was tossing things around, when I read a paper by a man called Richard Cormack in the journal of the Royal Statistical Society, which I thought was completely brilliant, and entirely serendipitously, about a week later, a postcard from Richard Cormack appeared on the departmental noticeboard advertising a PhD grant that he had got through the Economic and Social Research Council, which I think in those days was called the Social Science Research Council, and inviting applications. So I took a view that – I'd never been to Scotland in any serious way and a number of people said to me that Richard Cormack was a very nice man, and so I applied and I was incredibly lucky to be able to get that scholarship, and off I went to St Andrews and wrote a PhD.

That's where… he was based at St Andrews was he?

Sure.

Yeah. So, and what was that experience like for you?

It was brilliant. It was very, very interesting, because one of the brilliant things of LSE had been that a very, very high proportion of the student body was postgraduate, and so they were a little older, totally inspired by what they did and really clear to inspire other people. St Andrews at that time was a fantastic institution, but with a tiny number of PhD students, of whom most were in chemistry or divinity, as it seemed to me, and indeed, in the first year that I was at St Andrews, there were just me in statistics and two PhD students in applied mathematics. And so I think it was a very, very different experience, but again, the supervision I got was outstanding and the problem that I was addressing- I think it was, for me it was really exciting, because this wasn't a PhD in, if you like, just developing some mathematical theory of statistics, this was a PhD with a real problem and I enjoyed working with Richard Cormack very much, and also with a psychologist called Frank Quinault, and it was a really super-enjoyable time.

[0:19:35]
So what was the actual problem that you were working on then?

The problem that was to be addressed was that people had observed that at the University of St Andrews, which at that time had both significant numbers of students from England who had undertaken A levels, and significant numbers of students from Scotland who had done Highers and then a certificate in sixth year studies sometimes, that the dropout rates were much higher for the Scottish students than for the English students. And I addressed a whole series of questions, some of which were substantive, inasmuch as why was that, and others which were statistical, which were, okay, if you're going to predict educational performance from, at university, from school performance, then how do you put numbers on grades at Higher, A, B, C, you know, do we put that three, two, one; four two one, whatever, and A level in a way where the grades are comparable. So, you know, it's comparable to have an A level ranking with numbers on and a Higher ranking on numbers, the two are comparable. It's an interesting problem and one that I enjoyed working on very much.

And did you get the answer?

I'm not going to say an answer, I got **an** answer. Was it the perfect answer? Probably not, but it worked for those data and I think it helped people to understand that the importance, particularly for Highers of the A grade, as opposed to B grades and C grades, and the extra weighting that one needed to give.

So that was, as you say, a very practical application. Yes, it was not all sort of pure theory, you were applying it very much to society and that's what you wanted to do. So then…

I mean I think it's worth saying that also, you know, computing there was really, really interesting. Some of the programs I wrote required an enormous amount of computing time and the only way that could happen was actually to send them, to send the punch cards, great boxes of them, to Cambridge where they were run on a big mainframe there and where one would get the answers back, you know, for each run, certainly two or three days later. So one had to really be careful that the program, that the punch cards were in the right order and that the program had been written well. One also had another mainframe that one used at St Andrews, and interestingly, towards the end of my PhD, the very first time that one didn't need to use punch cards in my experience, and one was able to interact with a computer from a screen and interestingly as well, the University of St Andrews set up a computer with Heriot-Watt University and two other universities that I would not… I imagine would have been Stirling and Dundee, but I cannot remember, Heriot-Watt I certainly remember for reasons I'll just go into. And you could use the same data from any one of those universities, which was fantastically helpful to me because the rules under, and the rules governing scholarships at the time meant that the rules of the Social Science Research Council were that you could have a maximum of three years government grant. Well, I'd had one to do a Masters, so that meant I only had two years of money to do my PhD, and that meant that I scrabbled a bit of money together to help, but I ended up, I got a lectureship for one year at Heriot-Watt University and it was fantastic because I didn't have to move everything and learn a new computer skill, I just basically never changed my password. And at that time that was just totally path breaking for me, so exciting that I could be in a different city looking in front of a

screen and access my data. I was just, oh my God, this is so exciting. And that enabled me very much to finish my PhD very successfully.

[0:24:51]
So that was in the late seventies, I guess, was it?

Yeah, I guess, yeah, the last bit of the work I did was in 1979. So what happened was, yeah, I think I finished the analysis over the Christmas of '79/80 and handed my PhD in in the spring of 1980 and then the examination was in October 1980 when the examiner, who was the great Harvey Goldstein, was available.

Ah-ha. So, and that went well, did it, your exam? Because this was an oral…

Yeah, oral exam and it was, I mean I was thrilled. I'd loved the work that Harvey Goldstein had done and it was a total thrill to have the exam with him, so I made a few corrections and submitted successfully.

So okay, so you got the PhD and so then you went to Southampton University?

Well, I mean, yeah. I'd have to say that I had an interview for the job at Southampton. I was at Heriot-Watt, I had a one-year contract, and I saw the post come up at Southampton and that was just unbelievably exciting to me, because Southampton at that time, alongside London School of Economics, were the two places that really were doing social statistics. And indeed, this was a lectureship, it was a lectureship majoring in demography, which was something I'd taken in my undergraduate time, and it was in the Department of Social Statistics. So I was incredibly excited, I didn't think there was a chance that I'd get it, I'll be absolutely honest with you. But I went for the interview, probably – I can't remember, to be honest – but it was either before or about the same time that I handed in my final draft of my PhD, and I was interviewed, and I suspect, because of the quality of my referees, but whatever, they made me an offer and that was just a thrill. And I walked into Southampton University on 1st May 1980, as I recall.

So you got the job due to the quality of your referees, you were saying, probably?

I suspect, yes.

Yeah. Well, they obviously thought very highly of you. And did the job live up to expectations?

Yeah, it was totally brilliant. It was a very small department at that time, led by the great Tim Holt, and as I recall, had five lecturers and two secretaries, and it was a place of great energy, a place of great enthusiasm and a place where you felt you could just get on and do things and you would be supported. And I was supported not only in any way there, but also initially Tim Holt had arranged for me to spend a day a week at the Royal Fertility Survey, which was a big international survey based in London and was doing surveys in low-income countries across the world. And that was a great opportunity as well to be able to interact with colleagues from across the world and also to be able to analyse some incredibly innovative data and to be able to produce some work on population, which also I think was based on really quite innovative, at that time, surveys.

[0:29:37]
Yeah. So was your job, did you have to teach, I mean, or was it…

Oh yeah. No, no, no, no. Yeah, there was a lot of teaching. We ran undergraduate programmes, well, we ran undergraduate courses in demography that I taught both at first year and at final year, we ran a Masters programme that I taught a number of subjects on the Masters programme in social statistics, and it was a great place. And one of the reasons it was a great place was because, you know, people didn't mind you teaching whatever you wanted to teach and, you know, so we passed things around and that was great because I found, I've always found that the best way really to understand a subject is to teach it.

Yeah, I'm sure that's true. So you were happy to do that teaching, and…

Oh yeah, I loved it, loved it. I love teaching, you know, it was a great responsibility as well, obviously, to produce good research, and I got involved in a number of good projects and I really enjoyed those, but, you know, at the end of the day the teaching

was critical to what you do. And I actually take a view that if you want ever to put 'Professor' in front of your name, and I didn't at that time, obviously, but, you know, if you want to put 'Professor' in front of your name then you have to be prepared to profess your subject, and there is no better place to profess that subject than to first year undergraduates.

Yeah, sure. So you've stayed at, obviously stayed at Southampton quite a long time, from 1980 to 2002.

Yeah, I did. It was just fantastic and, you know, I had opportunities to go elsewhere, but you simply had to ask yourself, well, what would I get by moving, to be honest. We built up a department, we got great PhD students, we brought in some more lecturers because we had new programmes setting up, we had some great research projects. We had a big one once from the ESRC, which as it was then, which was really broad. It was fantastic working alongside people like Chris Skinner who is just a brilliant, brilliant, brilliant survey statistician, as well as John McDonald with whom I'd publish a whole series of things with Phil Cooper, and we just, it was just a great place to be and you felt things were exciting, you felt things were moving forward and how could you achieve anything better than you were achieving, so stay and get on with it.

Yeah. And you eventually became Deputy Vice-Chancellor.

Yeah. I was really lucky, I more or less, I mean after I got my Chair I was asked if I would become head of department, and I thought about it and I thought at that moment in time I was probably – it sounds arrogant – but I was the best person to do it of the people there at that time, and so I was persuaded to do that, I enjoyed that. Somebody then asked me to consider becoming the Dean of Social Sciences. I did that and enjoyed that, although I think I learnt an enormous amount also, so – about leadership and across a wider range of disciplines. And then, again, I was asked if I'd put my name forward and be interviewed for the position of Deputy Vice-Chancellor. I did and it was a much fiercer interview than I was expecting, but I was successful and I enjoyed that role very much as well.

So by this time you'd come a very long way from your roots. Presumably your parents, well, your father, was your father still around, I mean your parents must have been very proud?

Yeah. No, I mean my father had died well before this time, but he, I know, would have been incredibly proud and my mother was always incredibly proud.

So, okay, so just to sort of pause and think about IT by this time. So by the time you've got to 2002, well, gosh, even at the very beginning when you took on, you moved to Southampton, personal computers were beginning to appear, weren't they, and…

[0:34:25]
Yeah. We'd been at… I'd suggest that the first personal computer we had in the department was probably in about 1985. I remember it cost quite a lot of money. And we got used to using it over time. I mean they weren't, personal computers weren't that quick in those days, and so I must admit that for most of the 1980s and 1990s I continued to use the university mainframe computer, and there was very good support to do that. The thing I always remember, you know, throughout the 1980s one would run one's program but one still had to walk across to the mathematics building to pick up one's output, which as I was running some pretty big programs all the time was something I had to do all the time. That changed, one got used to initially being able to print things off within the department and then of course, you know, one tended to realise the ideal of not printing too much off and do things online. And that's what I did. It really was though, I mean quite a time before I actually had a personal computer. I remember, probably, I remember one probably in the 1990s that we had access to, but most of the stuff I always did was just through the mainframe until very late on, into the beginning of, frankly, the later part of the last century, beginning of this one.

Yeah. And presumably partly because the work you were doing would have involved crunching a lot of data?

Yeah, I mean I think it's worth remembering that we were analysing some pretty big datasets. I mean maybe not enormous datasets compared with the sorts of things one can do now, but they certainly seemed to be pretty big in those days and we were often working with some of the computational programming we were using at the extent of the space that even the mainframe had. And so it really wasn't an option at that time, certainly where we were in Southampton to be able to be doing major analyses on anything other than the mainframe.

Yeah. Yeah. Okay, so then, but then you did move on eventually to the ESRC in 2003, so what drove you to make that change?

Yeah. No, no, no, I mean, completely out of the blue I got rung in 1995 and asked if I would join one of the ESRC's grant awarding boards. I enjoyed that hugely and put a lot of work into that, and then not long after my time there had finished, I was invited to put my name forward for the council of the ESRC, the board, and I'd done that for a while and I enjoyed it and felt there were things that I might like to do, were I to be the chief executive, when the then chief executive, who I thought was doing brilliantly, moved to a new role, Gordon Marshall went to be Vice-Chancellor of the University of Reading. And I had a conversation with one or two people who encouraged me strongly to put my name forward, so I did. And again, I did so hopefully, in hope rather than expectation, and I had a really interesting interview, after which I was privileged to be invited to take the job. And I have to say, it was one of the very few jobs that would have moved me from Southampton, because I saw it as a job which had a real opportunity to move social science, broadly defined, into, if you like, the mainstream of the research base, an area that I didn't believe it had been at that time. And secondly also to really further the needs for a modernisation of data availability in the social sciences and to be able to impact massively on policy and on people's lives.

[0:39:47]
And did it fulfil those expectations?

Yeah, no, a hundred per cent, I had a great time. I was there effectively for about seven and a half years. The maximum length of contract was eight years. And I

believe that together with some great colleagues, people like Glyn Davies and Phil Sooben and Adrian Alsop and Astrid Wissenburg, we were able really to drive forward a vision that social science was incredibly important, not only in and of itself, but also in partnership with many of the natural sciences to bring a true multidisciplinary approach to many seriously important problems. And those are kind of things that we think of now routinely and we think of now as being obvious, but at the time some of that was actually quite innovative and it was also great being able to work with some of the other research councils, most notably the Medical Research Council and the Engineering and Physical Sciences Research Council, and to work across all of them through what was then Research Councils UK and which has morphed now into UK Research and Innovation.

And can you give any, perhaps one or two specific examples of sort of what you're talking about and what difference it made?

Yeah. No, I mean we managed to persuade David Rindt to chair a national data strategy and that national data strategy gave us the case to really expand the sample size of what was then the British Household Panel Survey into what is now known as Understanding Society. A really brilliant panel study and with great help from a man called John Hopcraft we were able to make the data collection include biological data as well as social data, and I thought that was brilliant. So, some really… and that survey continues, we made the case for a very large cohort study that case retains, and we also, I think, enabled the development of a lot of disciplines and also brought ESRC into the heart of a number of initiatives. And I immediately think of some work we did with Cancer Research UK, the British Heart Foundation, the Wellcome Trust and the Medical Research Council to build some centres of public health, or with the Arts and Humanities Research Council to build some centres which really focussed on language learning, but at the same time the substantive issues, for example, around economics and political science. So I think we really did do some really interesting things and I think we brought social science much closer to both the rest of the research base, but also to policy.

So you stayed there then until 2010, about, was it?

Yeah, 2010. And then I'd been asked if I would consider putting my name forward to lead the University of Aberdeen, and I did that and I was privileged to be appointed, and so I worked at the University of Aberdeen from 2010 through to 2018.

[0:43:55]
And was that, did you enjoy that job?

Yeah, I mean it was varied. I enjoyed a lot of it enormously, and I think together with my colleagues we were able to bring a greater focus on teaching and on the student experience, and that was reflected in 2018 by being awarded the Scottish University of the Year, something that I think was a great tribute to a lot of hard work from a lot of people. I was also privileged to do a number of things outside of the university, but for higher education, so some work both with Universities UK and with Scottish Universities, around efficiencies and to lead a group which we designed the Higher Education Funding System for Wales, and that was a huge privilege. So yes, it was a real opportunity and one that I remember with great fondness.

What do you mean by efficiencies? I mean that sort of sounds like motherhood and apple pie, really, that who wouldn't want to…

It is, but I think it is worth remembering that in the period following 2010 the UK was in a period of austerity in the post-financial crisis world and universities had been able to maintain their funding to an extent because of the way that government moved to fees and fees which were then paid back when one started to work. The implication of that was that universities, particularly in England, did not experience the reductions in funding that most of the public sector experienced. And I think that is important to remember because therefore there was a feeling within Universities UK that it was important for universities to demonstrate that they used every pound, effectively that they were getting from students, wisely and that they were not, if you like, being somewhat opulent with that funding. And so I was privileged to work with colleagues at Universities UK and some really, really committed people from other institutions to produce two reports on efficiencies which demonstrated the ways in which universities were spending every pound wisely and demonstrating to universities what the opportunities were around areas such as IT or procurement to reduce the amount

of money, the amount of public money that was being spent on particular areas. And I felt very privileged to do those two pieces of work and certainly I think they stand – well, I personally think they stand the course of time, but I would say that, wouldn't I?

[0:47:33]
So then you joined the ONS and that…

Yeah, I'd have to say that I did initially stop fulltime work for a while, for a year or so, and my intention, I'm passionate about further education, and I was asked to chair Edinburgh College, following an interview, and I was enjoying that enormously, and I was also doing one or two other things, and then someone asked me whether I would be prepared to put my name forward to be considered for the ONS. I would have to say that National Statistician, which was a role that I knew a lot about, not least because my original head of department at Southampton, Tim Holt, had been the National Statistician in the 1990s. And I had always loved dearly the work of the ONS, I'd been privileged at the end of the 1990s, beginning of 2000s to work on designing an under-enumeration strategy for the 2001 Census, an under-enumeration strategy which was subsequently used both in 2011 and in 2021. And so what, it didn't actually – I'll be absolutely honest – take too much persuasion to put my name forward. And again, you know, I feel incredibly privileged that I was invited to take on the role and I went into post fulltime. I started part-time because of some other commitments in August 2019, and started fulltime in mid-October 2019. And it's been a total thrill every day since.

And what is thrilling about it?

I just think it's… I just think it's unbelievably exciting. You know, we are charged at a moment in time where increasingly people are aware of the need for accurate, timely data in order to make policy which impacts positively on the lives of every citizen in our country, we are charged with producing those data and producing them in a way which the public can have trust. And that's been an incredible opportunity. I say to my colleagues very often that we need to recognise that our job is to reflect the economy and to reflect society and in so doing both those change very quickly, and so we're an organisation in a permanent state of change, we always need to be changing

what it is that we are doing because what we are trying to measure is changing. Then if you bring along with that the massive opportunities that increases in technology give us, both in terms of being able to think incredibly radically about what data are. So yes, we should continue to undertake surveys, yes, we should continue to measure things as accurately as we can, but equally we can use all kinds of different sources of data, whether it's telephony data, whether it's scanner data, masses of different types of data, many of them born digitally, which can be used in order to produce ever more timely, ever more accurate statistics. And at the same time we have also now got the technology to be able to merge datasets and that just gives you the opportunity to do things that you could only possibly have imagined in the past. And so, just as an example, during the pandemic, there was clearly a worry about the way in which the Covid-19 virus was impacting disproportionately on people of different ethnic groups and what we needed to do was to take death certification, which doesn't include ethnicity for very good reasons, link that to the Census data to get ethnicity, then link that to, for example, Valuation Office data to understand housing, so as to be able to have a handle on inequality, and also link it to health data in order to be able to get a handle on any comorbidities. And when you do that, you're able to undertake some analysis which shows you quite clearly that over and above controlling for disadvantage, people from particular ethnic minority groups had higher levels of mortality, and then you can start to say quickly what is it that we need to do about that.

And that is what happened, that's what you did?

Oh yeah, that's a real example. And, you know, I think during the whole period since I've been at ONS we have innovated with new surveys, we have innovated with new data collection, we have innovated with looking very carefully at how to use multiple sources of data to address big problems, and I think we've been extremely good in doing that.

Because statistics are notorious, aren't they, you know, in that they can be misleading, you can find statistics to support almost any argument. Equally, you know, people with a particular axe to grind, yeah, may undermine or may use

statistics which is invalid. It's absolutely fraught with hazard, the whole area, isn't it?

Ye-es, I mean I think statistics has had a bad press over a long period of time. I do actually think that rigorous, well put together statistics are incredibly reliable and are incredibly powerful. And certainly, I think there are now a number of people who would call themselves data journalists, at places like the *Financial Times* or at Sky News, for example, who are absolutely brilliant and for whom I would not say, under any circumstance, that they misinterpreted data. And one of the things I've really noticed in working with a number of journalists over the last couple of years, I think immediately of someone actually at the BBC, is a real desire to understand what the data really say and to report them entirely accurately. And I think that is something that we at ONS really need to think very carefully about, you know, we, our job is to provide the statistics, not only to provide the statistics but to communicate them in a way which is understandable to all the public, and to do so in a way which ensures that every citizen has a voice in our data. And I think if you think about that, then you move into a position where you are able better to understand that statistics are not, if you like, fraught with danger, but they just require a rigorous and careful use and an understanding of the assumptions underlying their collection.

[0:56:10]
Yeah. And what about artificial intelligence and machine learning? Is that beginning to have quite a strong role to play?

Yeah. No, I mean I think no question, I think there are things that you can do, for example, with textual analysis that I just think are unbelievably exciting. And having done some textual analysis a long time ago with focus groups and knowing how difficult and hard it was to do any, you know, I think what you can do with machine learning is fabulous. And I think there's a lot of really exciting things you can do with machine learning, I think there is real potential for, for example, privacy enhancing technologies, and I am extremely enthusiastic in getting all the best things we possibly can from machine learning. Having said that, I still believe that there is an important role for really understanding the problem and having a kind of theory underlying what it is that, a social theory underlying what it is that you're analysing,

and then your machine learning or your ever more powerful statistics can be able to iterate two solutions which really do inform the public much better than you could otherwise.

Yes. I mean people who are pure mathematicians – and your background obviously was in maths – and who are very focussed on that scientific analysis may not perhaps be so good at, you know, the softer, sort of empathetic skills of understanding, you know, what the real truth is. Do you think there's potentially a difficulty there?

No. Well, I can't speak… I do think that there is a real need to communicate properly. And if I go back to my life at Southampton, from 1990 for about twelve years I taught an undergraduate course in statistics, first year course, to social scientists and that really taught me about how to explain concepts extremely clearly and extremely straightforwardly. And I think we've a responsibility as official statisticians to be able to continue to build that kind of real clarity in our exposition and real transparency, you know. So I think it's so incredibly important that when we produce statistics, we do not just produce them as a number, we also produce the metadata, as it is called, around it, which explains what the assumptions are, what the pros and cons of these data are, so that people can really understand them and we're not overplaying them. And I think the other thing that I think is so incredibly important is to remember that most of the time what we do in statistics is produce estimates and estimates have what is often a measurable error around them, and we need to be able to produce that degree of uncertainty because, you know, if you're saying, well, our best estimate is that whatever it is we're estimating, the number is twenty-seven. Now if you're saying I believe that the best estimate is twenty-seven, and that's plus or minus a half, that's very, very different to saying the best estimate is twenty-seven, plus or minus twenty-six. And I think really understanding that, what we understand by uncertainty is incredibly important.

[1:00:08]
Yeah. What the potential margin for error might be in any… yeah. And looking into your crystal ball, how do you see these sciences, if that's what they're called, I suppose they are sciences, how are they likely to evolve over the next ten years or so, do you think?

Ah Jane, what a fantastic question. And if I step backwards ten years and ask myself what would I have said about now, I would probably have said things around some of the data linkage that we are now doing, but I would not have said so much around the use of, for example, telephony data or scanner data, I mean I would have thought, oh my God, that's just so otherworldly. So let me then say, given that, what's going to happen in the future. I do think that we will continue to be able to access data and to merge data and to address questions that one could only have imagined addressing when I was much younger. I do think the power to be able to analyse those data will be ever greater, but at the same time we need to recognise the threats that come from cybersecurity and therefore we need to be doing everything we can to ensure the safety of data and to ensure that we have the right governance around and the right public engagement, the right approvals, the right ethics for our use of data, and I think that will become ever more important in ensuring that we're able to have the public permission to be able to analyse some of the ever more complex datasets that we will be able to do using the kinds of machine learning, using the kinds of very powerful iterative statistics that we now have. So will statistics be less important in ten years? Absolutely not. Will it be more important, will we be able to do more things? Absolutely. And I think then, for an official statistics institute, there are two things I would say. The first is that I think we have to take a greater role in producing statistics which are accessible and easy to use by the public, broadly defined. And I think secondly, we need to be ever more radical and ever more ambitious in the way that we produce statistics at pace and produce statistics that are timely, and produce statistics which give every citizen a voice and that we do so quickly and inspirationally and in a way which means that they are accessible.

And what about your, well, you were knighted in 2013, I was going to say what are your proudest achievements, but would that, would you say that was your proudest achievement, or what would you put on the list?

I mean on a personal [inaudible] of course, you know, it is an enormous thrill and enormous source of humbling pride. Having said that, I mean I would point to the work I did in Wales, I would point to some of the statistics I've analysed, I'd point to the work that together we did on under-enumeration that stands up over the course of

time, some of the work I did in the 1980s around student projections I think is stuff that I'm very, very proud of. So while the knighthood is just the most incredibly wonderful thing and something that I'm incredibly proud of, I would rather think of some of the reasons why I got that knighthood as being contributing to – in a small way, I'm not going to overplay it in any way whatsoever – in a small way, contributing to improving our understanding of society and improving in a small way some people's lives.

[1:04:52]
Are you confident that, bearing in mind that you're adviser to government and so on - advisers advise, politicians decide - I mean do you feel that the importance of the advice that's coming from your organisation and from statisticians generally, is that really being heeded or do you think there's a risk that, you know, of the experts just being dismissed, which is one of the things we see sometimes happening in society?

I have no evidence of our advice being dismissed, I'll be honest. I have always found policymakers crying out for evidence, I recognise that it is incredibly important that the evidence is transparent, but at the same time policymakers have to take decisions, but I cannot think of an example where we have given some data or some evidence which has not been properly considered and taken into account in a way that I would expect it to.

Well, that's very reassuring. So for young people who might be thinking of perhaps statistics as a career, what would your advice be?

It's just unbelievably exciting. I do think that for those people who are interested, there can be no better career, particularly if you really keep a focus on real world problems, real problems that require analysis and numbers, and you can just move from one thrill to another.

And you've stayed in the UK, although you do have a sort of global role, I suppose, now in that you're supposed to keep an eye on influencing perhaps international standards and so on, do you think that the UK is holding its own in this area or… overseas.

No, no. No question. I think that clearly there have over the years been one or two very strong statistics institutes. I would in 2022 say that the Office for National Statistics in the UK was one of the stronger, strong**est** statistics institutes in the world, and that is not an arrogant statement, nor is it a complacent statement, it is just that I believe we have a team of people who are doing innovative and exciting work, rigorous work and a real commitment to being at the cutting edge of global standards.

Thank you very much. And you have mentioned a number of individuals over the course of our conversation, I was just going to ask you, looking back, who you might cite as your greatest mentors, people who might have influenced you or helped you on the way up, who particularly you'd want to mention?

Well, if I had to name some people – and very difficult to do – but name, there's a lot of people who have provided advice at different times and with whom I feel privileged to have worked. I mean I've mentioned Colm O'Muircheartaigh, I've mentioned Richard Cormack, I've mentioned Tim Holt, I mentioned Phil Cooper and John McDonald, you know, and more recently Jane Falkingham in the statistics sense, and then my colleagues at ESRC: Glyn Davies, Phil Sooben, Adrian Alsop, Astrid Wissenberg were absolutely critical. And at Aberdeen, Peter McGeorge and Caroline Ingalls [sp?] were incredibly central to some of the things that we achieved.

Well, we've covered a lot of ground, Sir Ian, is there anything you feel that you'd like to highlight that we haven't perhaps mentioned in this area?

No.

Well, thank you very much indeed. It's been a pleasure talking to you and I look forward to watching statistics with a more wakeful eye next time I'm reading a newspaper.

Thank you. It's been a pleasure, thank you.

[1:09:27 – end of recording]