

Talking with Michael Rutter

I. KOLVIN



Above Professor Sir Michael Rutter, FRCPsych, FRS. Photograph courtesy of the Wellcome Trust Medical Photographic Library.

Professor Kolvin: I have always been fascinated by creativity and the factors that contribute to it. You are an extraordinarily creative individual. Can we explore the origins of this? Are there any early life factors that you would identify as important?

Professor Rutter: I am not quite sure how one characterises creativity, so let me put on one side whether that is an appropriate adjective, and simply respond according to the way I am. My style has always involved a questioning approach, and I suppose there are two features in my background that might be relevant, although I really do not know the extent to which they were influential. First, throughout my childhood, I moved from place to place. Thus, I was born in the Middle East; then returned to the Midlands for a while; then during the war I was evacuated to the USA; when I returned, I lived in the Midlands and then in Yorkshire. That provided me with an appreciation of the value of different

cultural and individual styles. Possibly, such experiences may have made me resistant to all-encompassing theoretical explanations that ignored such variations. Also, those early experiences fostered independent thinking, autonomy and taking responsibility.

The other possible influence would be my Quaker upbringing. Quakerism differs from other religions in a whole host of ways, but most especially in the obligation that it places on individuals to decide things for themselves. There is no creed and a questioning approach is what is expected. The kind of youth groups that I went to as part of a Quaker upbringing encouraged me to question, to challenge authority, and to make up my own mind about important issues. That is a crucial part of the way I function.

Some people might expect the frequent moves of home to result in a lack of roots in a particular community and diminished opportunities to make relationships because every move would require new ones.

That's both right and wrong. It's right in the sense that the concept of having a home town means nothing to me – I don't have a home town. I have, if you like, lots of home towns, or I have none. But it would not be true to say that I didn't have continuity of relationships. For example, I am still in occasional touch with the family who looked after me for four years in the USA during the Second World War. I did not, at the time, experience those years away from my parents as a loss, and I don't now. I simply had two families, both of which were very important to me.

Were there any particular individuals who shaped your life course? In the past I had close working relationships with colleagues who were Quakers and I was impressed by their broadness, their openness, their sensitivity and understanding and their philosophy of life.

Oh, many and various. No one person stands out during my childhood. Nevertheless, there were a number of influential

individual teachers who encouraged me to think for myself. In Quaker youth groups outside school, George Gorman was certainly someone who made an impact as a person to whom religion meant a lot, but who was quite willing to challenge and resist convention and tradition when he considered it appropriate. Among my peers, too, there were friends who were important in getting me to be concerned about social and political issues. What characterised all of them was the combination of intellectual curiosity and fairness, both of which are qualities that matter greatly to me.

One of your great strengths is exploring ideas and looking beyond such ideas and concepts for their empirical basis. Did any of your mentors help you to think in this way?

All the people that I mentioned may have done so, but my family too – my grandfather and my father especially. However, this was not particularly in relation to science – that interest came much later. I certainly did not see myself as a researcher until very late on. But I was always an inveterate reader from the time I was very young. School always regarded me as being too varied in my reading.

You lived in the Middle East. Do you speak different languages?

No, I am an appalling linguist. When I was in the Lebanon, which was only until the age of three years, I did speak Arabic and English equally fluently, but my Arabic has totally gone.

What about your prodigious memory? Is this a phenomenon that can be thought of as something peculiar to Michael Rutter?

No, I have an appalling rote memory. When I was at school much history was taught in terms of dates of battles and of kings and queens; that was a nightmare for me. Similarly, I still have a terrible memory for names of roads, telephone numbers and so on. Equally, I never remember quotations. What I do have is a good ability to conceptually link facts and ideas. In so far as I appear to have a good memory, it comes through conceptual links, not from rote learning.

Can you give me an example of that?

Not really, because everything I do is like that. So people do see me as having a good memory, but it is actually quite misleading.

I understand what you are saying. But I am not alone in believing you have a phenomenal memory.

I have noted that you were always a physically active person. Were you a sportsman at school?

Not particularly, no. I was much younger than everybody else at school so, not being particularly good at sport, that put me at a sizeable disadvantage. I left school at 16 and became more involved in sport at university, although not in a serious way. Nevertheless, it is true that being physically energetic, in tennis and hill-walking nowadays, is important to me.

I have heard that your year of medical intake produced an excess of psychiatrists. Why do you think this happened?

Something of the order of 14 or so out of a year of about 100. We all came through rather different routes and that very high proportion was not typical of the years before or after, although Birmingham has continued to produce a steady flow of excellent psychiatrists.

Everybody who knows you and also knows about these other psychiatrists has wondered what the triggers were for so many distinguished psychiatrists coming broadly from the same year or the same intake.

To a considerable extent, the triggers differed for each of us. Together with my good friend, the late Bernard Williams (who became consultant neurosurgeon in Birmingham), I became fascinated during the later years of medical school by the workings of the brain; the book *The Living Brain* by Grey Walter, was one stimulus. At that time, I was equally interested in neurology, neurosurgery and psychiatry, did house jobs in all three and, as I do now, thought of mind and brain as an integrated whole.

A key event was my first meeting with Professor Mayer-Gross. At that time, you could do an elective at the mental hospital where he functioned. It was an extraordinary place for a man of his distinction to have landed up and, I think, not a good reflection on the way we treated refugees from Nazi Germany. What he did with medical students was to ask them to see an in-patient. You had an hour for the interview and then you presented what you had found out. I have a vivid memory of that hour because I couldn't make head or tail of the person I got. I could not obtain a history. I could not get a proper account of anything and I concluded that the only way to deal with that was to be up front and just confess. So I told Professor Mayer-Gross: "I'm sorry, I've completely failed you. I've not the remotest notion what's the matter, I couldn't get a history, and I'm afraid that it has all been a complete waste of time".

He said: "Maybe, but let's see. Tell me what you did, what you said, what the patient did and said and what you observed". And so he took me through the hour and made it a success, a pseudo-success, of course, because I had not recognised the significance of my observations. The patient had gross thought disorder and what he showed me was that I had made all the necessary observations for diagnosis. What had started as a humiliating failure was made into a success. That event certainly made an impact on me, partly because of his qualities as an individual teacher and partly because of the interest in the phenomena that he aroused. I do not mean that was the moment when I decided to do psychiatry, but it certainly played an important part. Later on, he advised me on how to carry my career forward – arguing the value of a firm grounding in general medicine and neurology before proceeding to psychiatric training at the Maudsley.

Professor Mayer-Gross was obviously a stimulating man. He linked up with Professor Martin Roth and Dr Elliot Slater – did you ever meet them?

Later on, but not at an early stage, and neither influenced me particularly.

I suppose there were many stimulating mentors at the Maudsley, and possibly some before going there.

Oh, many people. I think that my career has been shaped, to a considerable extent, by my extreme good fortune in the individuals who taught me. For instance, there was Stephen Whittaker, a general physician, who buried himself away in Warwick Hospital at a time when people expected him to take a Chair in London. He was a wonderful teacher and I learned a lot from him about clinical observation and how to put findings together in the study of patients. Shortly after that, I went to the National Heart Hospital and I was enormously influenced by Paul Wood, who frightened the living daylights out of all of us. He was a highly intelligent man and a wonderful clinical observer, who made a great impression on me because of the way he tied together what the patient said, and what he had observed, into hypotheses about physiology. He would work his way through the logic, and you hoped to goodness that you had made the appropriate observations and done the right tests. He was usually correct but occasionally, of course, he was wrong. When he was mistaken, he undertook a ruthless self-examination. Was he wrong in his observations or in his logic; why had he landed up

with the wrong answer? I thought that was a wonderful model to follow and I aspired to do the same in psychiatry.

William Evans was also at the Heart Hospital and he, too, made an impact, although I had less to do with him. One of his favourite teaching techniques with a group of students, most of whom were from abroad, would be that he would start by giving a didactic account of the accepted knowledge on a topic – such as coronary artery disease. The students would all write it down carefully in their notebooks. Then, he would pause and say, "Cross it out, Willy Evans says it's rubbish". Everybody would be very puzzled at first, but then appreciated his questioning approach to the given wisdom. All three of those individuals made a big impact on me before I entered psychiatry.

At the Maudsley, Aubrey Lewis was a towering figure, enormously supportive at an individual level but questioning and rigorous. You had to do things well with Aubrey, but he derived obvious pride when you did. None of us bettered him in an argument other than occasionally, but when you did, he was very pleased. For him, as for me, both the intellectual process of exploring alternative explanations and landing up with a valid account were crucial. He valued theory as a way of making sense of facts but he had no time for theory-driven answers. It was vital to pay attention to findings that ran counter to theory and essential not to leap to premature conclusions.

Was this a kind of Oxbridge way of exploring ideas?

I do not know. I've never been at either Oxford or Cambridge, so I cannot compare.

So he loomed large in your mind as one of your mentors?

Yes, indeed, but I would have to add Neil Kessel (who later held the Chair in Psychiatry at Manchester), who was senior registrar at the time. He was a wonderful tutor on how to play this intellectual 'game'. It was a game in the sense that it concerned a process of intellectual interchange, and it was fun, but it was serious in the double sense that the goal was to end up with the best understanding possible and to do so in a way that helped the individual patient. Neil Kessel was a constructive cynic in many ways but, also, he was important in making me think about myself in a more academic way. I hadn't

really seen myself as an academic at all up to that point and Neil changed that.

Who stimulated you to go into child and family psychiatry?

I came through a variety of routes, some of which I was conscious of at the time and some of which I was not. I had done a period in paediatrics because I had not been appointed to a general medical job that I expected to get. Then I was phoned by Stephen Whittaker to say that there was a paediatric job; would I take it? I did. That experience actually made me very aware of children's feelings and responses, although I had not intended to do paediatrics. The journal clubs that I did at the Maudsley were also both influential. One was on sensory deprivation and got me interested in deprivation more generally. The other was Carol Buck's Canadian study of statistical relationships between illness in parents and disorder in children. Those papers were just allocated to you in those days. Towards the end of my psychiatric training, Aubrey basically decided I would do child psychiatry. I remember well the interview I had with him at that time, because I had not seen myself as doing child psychiatry at all and I was very sceptical about clinical child psychiatry. He said that he thought the challenge was there and I should do it. I was, by then, interested in the research issues, so I said I would give it a go.

Do you think that was almost a 'gut feeling' by Aubrey or did he have some other clues?

I have no idea. He had an extraordinary ability to recognise what suited people and he was right with me. I certainly would not have chosen child psychiatry for myself, not in a month of Sundays, but I rapidly became as interested in the clinical aspects as in the research. It was good for me to have to do things that were outside my choices, although it is now unfashionable to think that.

Those journal clubs constituted the source of some of your early major research themes. Can we turn to your diversity of interests. They cover the whole spectrum of child and family psychiatry, developmental psychiatry, neuropsychiatry, social psychiatry – so vast and sometimes I'm not sure just how you encompass all of them. Do you want to comment on this?

Well, I think that came about partly because I have an insatiable curiosity. When I go to the library to look something up, I tend to have my attention taken by adjacent articles on an entirely different topic. Partly by later mentors who covered a broad

range. Aubrey decided that, if I was going to do child psychiatry, I needed to learn about child development. He made various suggestions of people in the USA with whom I might work, but none excited me particularly. I was a bit stuck because I recognised the importance of getting that experience, but I was unhappy about the specifics. Then Herb Birch (at Albert Einstein College of Medicine in New York) gave a talk at the Maudsley. After hearing him, I went to Aubrey and said that's the man I want to work with. Herb had an amazing range of interests; he started as a comparative psychologist and while holding his Chair in Psychology, went through medical school. He was a true polymath and he excited my interest in all sorts of things. During my year in New York, I also had the good fortune to work with Alex Thomas and Stella Chess, who were incredibly kind and helpful in innumerable ways.

On my return to the Medical Research Council Social Psychiatry Unit, Jack Tizard, also a psychologist, made a similar impact. He especially engaged my interest in epidemiology and in the interface between science and social policy. Both Herb and Jack were enormously generous in helping me do things, and in giving me the opportunity to take responsibility when it would have been natural for them to take charge. The Social Psychiatry Unit included a variety of other people who were also important. Beate Hermelin was one, though I never worked directly with her. Aubrey had alerted me to her fine qualities, rightly noting that I could learn a lot from her (but adding that he feared her!). She had, and still has, a very sharp intellect. The sort of experimental research that she undertook with the late Neil O'Connor certainly had an influence in making me think in experimental ways. Another influential person, though again, someone with whom I never worked directly, was the biologist Robert Hinde. I had met him before I wrote my maternal deprivation book and, somewhat hesitantly, because I had no call on his time and scarcely knew him, I sent him the manuscript asking whether he had any suggestions. In typically generous Robert Hinde fashion, he wrote back some 17 pages of closely written comments, quite critical, although supportive. As a result, the book acquired a different dimension and was the better for it. The mentors I had were quite varied and my interests reflect theirs to a considerable extent, shaped of course by my own temperament.

I have noted that you 'start-stop' research in particular areas. Do you know why you start things, and why you carry on with some but drop others?

I'm not sure that I do start-stop. I find it difficult to think of areas that I have left. Indeed, critics would argue that I keep too many interests going (although I do not agree). Why do I take up research topics? Simply when there is an interesting and important question that attracts me and for which I think I have, or can acquire, the necessary technical skills to tackle it. I'm especially likely to take on a topic when there is a challenge attached. I quite like having challenges and I get particular pleasure from research that people say either cannot be done or shouldn't be done. My collaborative research into school influences on children's behaviour and educational progress is an example of that kind. It arose out of an incidental finding in earlier epidemiological studies that there were quite marked school differences in levels of disturbed behaviour and reading difficulties. Initially I had wanted to study that issue on the Isle of Wight but, although people there had been extremely helpful in our other research, we did not get a sympathetic hearing for the idea of investigating school functioning. Then a few years later, when presenting the results of our findings to school teachers who had helped us in our London surveys, there was somebody in the audience who gave me a tremendously hard time in her questioning about what the findings meant. She seemed to be a hostile critic. I was amazed when she came up afterwards and said: "You absolutely can't leave that finding where it is. We've got to know whether school differences represent an effect that the schools are having on the children or whether these reflect the kinds of children each school admits. What I suggest is, that you and I and our joint colleagues set up a group of teachers and researchers to find out". That was Mrs Pringle, who was a headmistress of one of the local secondary schools. It took a moment to overcome my shock that, far from being a hostile critic, she was a supporter. We then set up just the group she asked for and it proved to be crucial for the success of the research. The initial instigation of research into schools, then a new area for me, arose out of an incidental observation that provided a challenge and which seemed likely to be important in understanding causal mechanisms. That would apply to most other new topics for me.

When do I continue, when do I stop? Most of the things that I do now are natural outgrowths of things that began 30 or 40 years ago, although obviously the details have changed a good deal. I can't actually think of topics that I've dropped as an interest, although there are several for which colleagues have taken over the leadership. That would apply, for example, to hyperactivity, where Eric Taylor is the world leader; to neuropsychiatry, for which Robert Goodman is the expert; and to depression, where Richard Harrington and Eric Fombonne both know far more than I do.

There is a very major question – what kind of scientist are you? Do you see yourself primarily as a child psychiatrist or a developmentalist or a researcher in human development?

I suppose I am a questioning scientist. I like to understand things, so I have always focused on processes and mechanisms and, in seeking an understanding of those, it has always seemed to me that a developmental perspective was crucial. All the early mentors that I've mentioned emphasised the importance of looking at continuities and discontinuities between normal and abnormal development, and that inevitably meant a breadth of approach. Peter Medawar, the Nobel Laureate biologist, wrote about science as involving creative ideas, of telling possible stories about what empirical findings might mean, and then putting these stories rigorously to the test. The aim, therefore, is, in iterative fashion, to try to get nearer and nearer to what the true story really is. That would certainly be what I would try to do.

As for your question on discipline, the answer is 'yes' to all you mention. I am a child psychiatrist, very much so. My interest in the clinical side of child psychiatry, which wasn't present at the beginning, has been very strong for over three decades. But I am as much a psychologist as a psychiatrist in the way I approach scientific questions. Clearly, too, I am a developmentalist in all the research I undertake. I've been a psychosocial researcher all my life but my first paper on genetics was 35 years ago and in recent years genetic research has come to occupy a major place in what I do. So, I've a strong identification with all the disciplines you mention, plus others.

Your child psychiatry colleagues might have preferred an answer with a stronger exclusive commitment to that field.

I am committed but not with exclusivity; in my view that would be both inappropriate

and unhelpful. Child psychiatry will not grow if it is isolated from the rest of science and medicine.

Putting aside disciplinary affiliation, how would you describe your research style?

Of course, my style is one shared with that of many other investigators but I would pick out six main features. First, I enjoy and value innovation both in the conceptualisation of issues and in the devising of research strategies and tactics to tackle them. Second, I would rather make definite statements that are open to disproof, than vague generalisations that can never be shown to be wrong. Third, I am committed to the need to change my ideas (and to make it publicly explicit that I have done so) when empirical findings show that I have been mistaken. I suppose, though, that I quite like recognising that need before others do so. My shift of view between the 1960s and 1970s on the importance of genetic factors in autism, and the alteration in my views between the 1970s and 1980s on the long-term effects of early experiences (as I appreciated the extent to which later experiences were shaped by the effects of earlier ones) would both be examples of that kind. Fourth, I place a higher premium on getting answers right than in publishing first. I accept that credit goes with first publication, but the psychiatric literature is full of premature excessive claims of many kinds and I have tried to avoid being part of such over-enthusiastic evangelism. There is a danger of excessive caution but that can be countered by thoroughness in carrying through a systematic research programme that seeks to provide a real understanding of causal processes. Accordingly, I take some pride in the extent to which most of the research with which I've been associated has stood the test of time, with findings replicated by others. Fifth, I regard it as crucial to be ruthlessly critical of my own research findings. As all my collaborators have had to learn, I tend to keep thinking of further analyses that should be done to test inferences, with an emphasis on analyses that could prove us mistaken. I do not like a research style that focuses only on efforts to support one's own ideas. Finally, as an extension of that same point, I enjoy thinking of how concepts can be put to quantitative test using novel approaches. I lack technical mathematical skills (I gave up maths at 14 years) but I come from a mathematical family and I was always good at the subject, so I tend naturally to think in

quantitative testing terms. I particularly appreciate the ways in which statistics can be used imaginatively to evaluate concepts.

What about your training? You have not had a traditional child psychiatry training. Do you think that matters because nowadays the powers that be, in their wisdom, seem to be obsessed with putting trainees into some type of training strait-jacket.

Perhaps because I haven't been trained in any of the things people would regard me as expert in, I have a sceptical approach to training. Raising standards in training must be a good thing, so that I am positive about that, but I share your concern about the rigidity that unfortunately tends to go with it. I've never had formal training in child psychiatry (Aubrey Lewis decided it would be unhelpful!). My training in epidemiology was through contact with Jack Tizard, rather than formal training. Child development, again, I learned through informal contact with Herb Birch and others. The same applies to genetics. There is a considerable danger of not mastering the essentials and it is very important that, in training yourself, you are very aware of what you do not know as well as what you do. Nevertheless, I am in favour of continuing learning throughout life and taking some responsibility for our own further learning.

The views you have advanced are of immense importance – I know about your background and your creativity, I'm not sure if your creativity would have developed in a hidebound training framework.

Yes, I think that is correct and current trends worry me as they do you. I had rigorous training at the Maudsley but it involved a considerable degree of freedom as well and that was a very important part of the experience.

What about your collaborators? You have given a vast amount to your collaborators but what have they given to you?

I've been very fortunate over the years in having an extraordinarily talented group of collaborators from whom I've learnt a lot. I've mentioned some of the more senior ones, but George Brown would be another; we worked together back in the mid-1960s and have kept in touch ever since. The same applies to Philip Graham and Bill Yule, with whom I worked closely in several projects. Also, there are many junior collaborators – far too numerous to mention individually. But almost all that I have done has been collaborative and almost all has involved teamwork of one sort or another.

I particularly prize certain kinds of interactions. I like people who argue with me, who force me to think, who challenge my ideas and who share my enjoyment in intellectual interchange. To take two people in recent times, both Andrew Pickles, the statistician, and Lindon Eaves, the geneticist, fill that role. Andrew is particularly good at blending conceptual ideas and statistics. I've enjoyed arguing with him and writing papers with him. Usually what we've written together turns out to be rather different from what either of us would have written on our own. I deeply regret that there have been fewer such collaborations in the past few years. Similarly, with Lindon, I prize very much the friendly constructive arguments we have. He forces me to think and I enjoy that. I don't like yes-men. I hate both defensiveness and a style built on personal control and proving that you were right about everything. Indeed, in one of my papers, I argued that you learn more from the instances when findings force a change in concept than those that simply confirm the view with which you started. It bothers me greatly that biological psychiatry, including genetics, has acquired some of those qualities that I abhor and which they criticise in others. Obviously collaborators have varied their styles, but I've been very fortunate in the outstanding people with whom I've worked.

What about our Child Psychiatry National Research Society of which you were the first Chairman – do you think that is a useful or helpful institution?

Yes, I do. At the time it was set up, a quarter of a century ago, there were very few people in child psychiatry doing research. We were all rather isolated and this kind of self-help group was highly supportive, intellectually interesting and specifically instructive. A crucial feature of its style was the acceptance of the value of being able to talk frankly about difficulties as well as successes. I hope that it does not lose that quality. To be frank, I do worry somewhat about the destructive elements of competition that derive from the current emphasis on comparisons of individual success.

Can we move on to a challenge on dynamic psychology and psychiatry. You are thought to be uninterested in this field.

No, that is quite wrong. To the contrary, I've always been interested in the workings of the mind. My first readings in psychology while I was still at school were largely

by Freud, actually long before I intended to do psychiatry.

During my clinical training, a concern with mental mechanisms was certainly important. Also, the way that I have thought about family functioning and about psychological development, all very much reflect a dynamic view. What is correct, however, is that I am a non-believer in dogma – whether it involves the 'religion' of psychoanalysis or family therapy or the religion of biological psychiatry or behaviourism. I am far too much of a questioner to have ever gone through psychoanalytic training. Nevertheless, psychodynamic ideas have been very important to me.

What about your career? Apart from sabbaticals, you have been at the same institution for over 40 years! Why didn't you ever move?

I always said to myself that I wouldn't stay longer than 10 years anywhere, so that is a pertinent question. It's not that I have a belief in staying put, but rather that when there have been opportunities to move, it always seemed that I could do better what I wanted where I was. Nevertheless, over the years, there have been several major transitions, even though they did not involve a geographical move. The setting up of the Medical Research Council Child Psychiatry Unit in 1984 was one such example, and the establishment of the Social, Genetic and Developmental Psychiatry Research Centre a decade later would be another. My work has always involved very important links with people and institutions elsewhere. Although I've worked at the Maudsley and the Institute since 1958, which is a long time, intellectual stimuli have come from a much broader range of places and I have not done the same thing over that period of time. Indeed, it has involved several major changes of direction.

May I turn to a few personal things? You seem to have no interest in medical politics. Have you wanted to be involved?

No. I'm very interested in the policy implications of scientific findings but I'm not interested in medical politics. I've never played any significant part in them and have never wished to do so.

You have written, I think, over 400 articles, I may be underestimating, and over 30 books. I don't know how many of these are scientific tomes, how many of them are reviews or chapters. But this is almost beyond comprehension. That must have taken a tremendous amount of effort and time. Have you enjoyed it? Has it been a labour of love, toil or what?

It's been all of those things. Writing didn't come easily to me at first. An important person in that, incidentally, whom I haven't mentioned, is Bob Cawley. I gave him my doctoral thesis to look at and he completely rewrote the first five pages to show me what he meant by the way I needed to express ideas more clearly. It was a devastating experience at first but a hugely helpful one for which I'll always be grateful. So I've learned over time to write. I tend to enjoy exploring new ideas (so that a number of the papers are conceptual) and I also enjoy telling stories about empirical data. In both cases, I tend to draft and redraft the papers in my head many times before I actually put pen to paper. Inevitably the flow comes intermittently. So, like everyone else, I have periods when writing is very hard and I struggle to meet a deadline. Fortunately, thoughts usually free up, sometimes just in the nick of time. Nevertheless, I regard the meeting of deadlines as important.

You have brought a unique status to child psychiatry. It was a very low status discipline before and you've raised this status among the major professional medical groups. Early on you must, of course, have been exposed to much criticism and denigration of the subject and its achievements. How do you manage to deal with this when you meet your colleagues from other very powerful professional groups?

You're right that there is criticism. Indeed, in some quarters (although fortunately not many) the success of child psychiatry in recent years (brought about through the work of many people) has occasionally provoked jealousy. That is inevitable. I have not found criticism as such a problem. Indeed, I quite enjoy the stimulus it provides. On the other hand, I do get upset (too upset, I realise) by personal hostility and I'm not particularly good at dealing with it.

Many honours have come your way, both national and international – more than any other child psychiatrist or even any general psychiatrist other than Martin Roth. That leads to two reactions among your colleagues. One is a massive respect for your achievements but some are rather daunted by you and perhaps, because of these achievements, think you're not approachable. I have never found you not approachable but this feeling exists.

Well, I hope I am approachable. I think that status, age and position do get in the way sometimes, although perhaps less so for junior colleagues who have not grown up in the English tradition. Certainly, many of the friendships I have developed with younger colleagues have been with people

from abroad. I try to make myself available to others, I place a high premium on being helpful to others (and get great pleasure from that), and I regard responsiveness to the ideas of others as both important and rewarding for me. My style, however, is a questioning one. Some people like that and some, I'm afraid, do not.

How much have you learnt about social behaviour and interactions from observing your children and grandchildren? Have you ever used the same scientific goggles that you would do in research?

No, not really. I don't think about my children and grandchildren in that way at all. I certainly don't approach them as a scientist or a clinician and I'm sure they wouldn't see me in those terms. Obviously, I have been influenced throughout my career by my observations of individuals, and those in my own family are the ones I know best. Perhaps most of all, my awareness of individual differences among them reinforced both my interest in temperamental variations and in the ways in which environmental effects tend to impinge differentially according to variations in personality and psychological vulnerability. I've also been impressed by the ways in which children change over time, so that I've never been inclined to accept theories that presupposed fixities in personality development.

You have such energy, such wide interests which combine with intellect. Many wonder what you are going to do when you hang up your boots? There are some – a few – who continue to make massive contributions into their mid-seventies?

I'm not ready to hang up my boots yet. I am, however, very aware of my responsibility to step aside, at the time I retire, so that I don't get in the way of my successors in any of the various positions I have occupied. I think Aubrey Lewis was a wonderful model for that. He retained an office at the Institute but he never commented on any of the changes, or decisions, that took place after he retired. He was quite punctilious about the need to avoid interfering and certainly I will aim to do the same. I don't foresee any problems in that. I gave up being Head of Department four years ago (Eric Taylor took over very successfully) and I gave up running the clinical team a decade before that (handing over to Tony Cox), accepting that the leadership was being taken on by younger colleagues. That has worked very well in both instances; my rewards have never come from personal

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control. My own personal goals for the next few years are three-fold. First, there are individual research projects in which I will remain closely involved. These include the follow-up of the adoptees from Romania (which will be led by Tom O'Connor), the molecular genetic study of autism (led by Tony Bailey and Tony Monaco), the Isle of Wight follow-up (led by Barbara Maughan) and the study of environmental risk mechanisms for early disruptive behaviour (led by Terrie Moffitt and Avshalom Caspi). I shall also hope to remain involved with the Virginia Twin Study of Adolescent Behavioral Development (led by Lindon Eaves). Second, through these studies, and through encouraging the work of others, I will hope to play some contributory role in the broader scientific enterprise of understanding nature–nurture interplay – the central mission of the Centre set up in 1994. Quite how that happens will need to be shaped by the wishes of the new director, Peter McGuffin, whose appointment I greatly welcome. Third, quite a lot of my time and energy will need to be applied to my role as a Governor of the Wellcome Trust and Trustee of the Nuffield Foundation. I have greatly enjoyed the interest and opportunities that both these broader responsibilities have brought. So, the challenge is to be able to go on exercising curiosity while at the same time recognising that this will have to be done in a somewhat different way in the future.

Let me pick up on that. You've started a very large, major new longitudinal study of twins. That will need direction, guidance, and thought – the kind of thought you've given to your other research projects over the years. How do you envisage that happening?

That will be provided by Robert Plomin – a man of prodigious drive and energy. I played a role in setting up the study and in the thinking behind it but he has been the controlling force throughout and I have now stepped aside from that project. There are plenty of other people to carry it forward under Robert's leadership. Of course, Robert and I will continue to collaborate in the Moffitt–Caspi study based on the twin sample, and in Centre activities more generally. I think that it has been a

real plus in the setting up of the Centre that we come from different backgrounds and see some things differently while agreeing on the main essentials.

It would be a pity if you marginalised yourself too much, but it sounds as if you will have plenty to do. Let me end by asking about your leisure activities.

I've already mentioned my interest in tennis and fell-walking. We have a house in the Lake District to which we go about three times a year, almost always with either my parents (both still active walkers in their 90s) or children and grandchildren. It's been a great pleasure that all the family share these interests. It is perhaps a bit early (six weeks) to know if that will be so with our youngest granddaughter, but Marjorie (my wife) and I play tennis and go mountain-walking with the two older grandchildren. Marjorie and our three children also share my interest in wine and my enjoyment of comparative wine-tastings (as well as my dislike of the pretentiousness that is sometimes associated with them). As you can see, family activities are an important part of my life outside work. One of the joys of living in London is going to the theatre and to concerts, both of which I love. I have no skills in music but I get great pleasure from it – both classical and jazz. Marjorie is a wonderful singer and one of the real surprises for me during our year at Stanford was seeing her perform and hold the audience in her hand – her singing on the amateur stage was all before we met. Our son, Stephen, is the jazz aficionado – my interest preceded his, but his knowledge has long since greatly exceeded mine. Books, too, I have to mention because I get great pleasure from reading. Finally, talking and being with people. Although, by nature, I'm quite a shy person, I enjoy social life – more in small groups than large ones. Social and intellectual interchange has provided me with much of my rewards in my work. It has been a regret that the pressure of work in recent years has diminished those opportunities and I hope that the post-retirement phase will increase them again.