



Michael Rutter

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A Conversation with Michael Rutter

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Abstract

The *Annual Review of Developmental Psychology* presents a conversation with Professor Sir Michael Rutter, held remotely in the time of COVID but nonetheless wonderfully revealing of who this incredible scholar is and how he thinks. The contributions he has made to our understanding of child development are so vast and varied as to almost defy description. Erudite, articulate, and rigorous in his science, Michael Rutter is also deeply compassionate, caring, and outcome oriented. With training in medicine, neurology, pediatrics, and psychiatry, he held the first child psychiatry appointment in the United Kingdom and set up both the MRC Child Psychiatry Research Unit and the MRC Social, Genetic & Developmental Psychiatry Centre (SGDP). Unfortunately, Sir Michael passed away on October 23, 2021 while this article was in press. We feel fortunate to have had the opportunity to get to know Sir Michael, and to share this interview with you.

INTRODUCTION

The contributions Professor Michael Rutter has made to our understanding of child development are so vast and varied as to almost defy description. Erudite, articulate, and rigorous in his science, Michael Rutter is also deeply compassionate, caring, and outcome oriented. With training in medicine, neurology, pediatrics, and psychiatry, he held the first child psychiatry appointment in the United Kingdom and set up both the MRC Child Psychiatry Research Unit and the MRC Social, Genetic & Developmental Psychiatry Centre (SGDP). For many years, he served as head of the Department of Child and Adolescent Psychiatry at the Institute of Psychiatry, London. In a career marked by successfully bridging research and practice, he made transformative contributions to our understanding of how home and school environments affect development in both typically and atypically developing children. He advanced our understanding of autism. He showed us that children can have an attachment to more than one person, and that it is the quality of the attachment that matters. He helped reveal the multitude of pathways toward childhood depression and antisocial behavior, and he shined a light on influences on and interventions to ameliorate reading difficulties, among many other contributions. In addition to more than 400 empirical articles, his books include *Maternal Deprivation Reassessed*, *Fifteen Thousand Hours: Secondary Schools and Their Effects on Children*, *Helping Troubled Children*, *Genes and Behavior: Nature–Nurture Interplay Explained*, and *Developing Minds: Challenges and Continuity Across the Life Span*—the last written in conjunction with his wife and lifelong companion, Marjorie Rutter (Rutter 1972, 1975, 2006; Rutter & Rutter 1993; Rutter et al. 1979). Recognized with countless awards and titles, including honorary member of the British Academy, fellow of the Royal Society, and founding fellow of the Academia Europaea and the Academy of Medical Sciences, Sir Michael Rutter was knighted in 1992.

Below, we share a conversation between Michael Rutter and Janet Werker, held remotely in the time of COVID but nonetheless wonderfully revealing of who this incredible scholar is and how he thinks. Michael and Janet got to know one another through their joint participation in the Canadian Institutes for Advanced Research program on Child and Brain Development. We feel fortunate to share this interview with our readers so they may get to know him as well. He is as inspiring at a one-on-one level as he is at the societal and organizational levels. He epitomizes how scholarship and leadership should be done and serves as a model for what we as developmental scientists might hope to achieve. Ever generous, Michael gives credit throughout to his mentors and his collaborators and gives encouragement to the next generation of scientists.

Janet Werker: In the early 1960s, maybe late 1950s, you joined Stella Chess and Alexander Thomas in New York, where they were doing some of their remarkable work on infant temperament. Can you tell us how you found your way to work with them?

Michael Rutter: I found my way to work with them in a roundabout way, really. If I can just step back a bit in time, Aubrey Lewis, who was the head of the Institute of Psychiatry, London, at that time, had said that he wanted me to do academic child psychiatry. In order to do that, I needed to study development, and the place to come was America. He suggested various places, none of which appealed to me very much, until one day Herb Birch, a charismatic and provocative character, came to give a lecture. I went down to Aubrey Lewis at the end of it and said to him, “That’s the man I want to work for!”

Of course, [Birch] then had to discuss this, presumably, with his colleagues, Stella and Alex. Then there was the question of getting funding to do all of this. But I went ahead. They were great people to work with. They couldn’t really have been more different. On the one hand, Herb Birch was clearly the scientist and methodologist; on the other hand, Stella was very good at putting it all into a clinical context and discussing in her writings how to deal with this clinically.

People found it quite revolutionary. They were used to people talking about psychoanalytic ideas; they were not in the least bit used to people talking, as she was doing, about behavior. That sort of opened everything up. I had a wonderful time with all of them. There were very, very good to me, and I learned a lot from them.

Werker: It's often not appreciated that the study of temperament was actually brought to developmental psychology by child psychiatrists. What is your opinion on how these two fields have worked together and how they've mutually benefited? This is basically your career!

Rutter: Obviously, child psychiatrists, particularly Stella Chess, played a major role in developing temperament and the thinking surrounding that. They didn't actually use the term temperament to begin with, but I suggested, and Birch backed it up, that in order to get the ideas talked about, it would help to use a term that people were used to thinking about. Temperament was the obvious one for that to take place.

Now, of course, there were other people who were in the field that I need to emphasize. Annette Karmiloff-Smith, for example, was working in London most of the time, but she had worked abroad earlier and was a key person in that. She said, in her usual provocative fashion, that in order to understand the role of the development of disorders, you had to put the study of development in the central position. And she attempted to do that. I knew her very, very well. She sadly died recently, and she's got a festschrift in her name that is being published (Thomas et al. 2021).

Then there were people who will not have seen themselves as part of this field at all, like Jerry Kagan. But Jerry was, and still is, a provocative thinker. He played a major role, I think, in getting people to think about this topic. He says he's now written his last book. Well, we'll see.

Werker: This leads nicely into the next question, because it kind of overlaps with it. You, along with Norm Garmezy, but you're saying others as well, are credited with introducing developmental psychopathology. This perspective emphasizes that normative development is a necessary comparison for determining whether a youth's behavior is atypical or problematic. You've just talked about this a little bit, but we take this perspective for granted today. Can you tell us how things were different before developmental psychopathology and how you and others came to these ideas?

Rutter: You're right. Before Norm and I worked together—he had worked for a year in my department in England before we worked together at the Center in Stanford, in the States. He was very insistent that you can't understand abnormal development unless you understand how that interacts and interplays with normal development. I guess that's really what developmental psychopathology is all about. I don't know who said that developmental psychopathology is a field yet to develop, because people, as a whole, didn't think in that way. But they should.

Werker: That's for sure. We completely take it for granted today.

Rutter: That's right. You put my work with Norm in terms of developmental psychopathology, which is the way it usually has been put. But in the book that he and I edited together, that term was not in the title. We used "stress, coping, and development" (Garmezy & Rutter 1983). He was very concerned, and I was too, that the issues of stress resistance and resilience needed to play an important part in thinking. Nowadays one would take that all for granted, but it wasn't before then.

Werker: Interesting. So that is different from developmental psychopathology.

Rutter: It is, really, but that's not a term either of us preferred to use, and yes, of course, it did bring together normative development and abnormal development. That was the important part of it, but it was only a small part, really.

Werker: Interesting. Certainly the understanding [and] now the importance of early life stress and coping is, as you said, part of mainstream developmental psychology and developmental psychopathology.

Rutter: Yes, yes, indeed.

Werker: I want to ask you about the Isle of Wight Study in the 1960s/early 1970s. It is regarded as one of the most important epidemiological studies of school-aged children, a harbinger of many other cohort studies to follow. Can you summarize the most important insights from that study?

Rutter: The Isle of Wight Study was not one study; it was several different studies. The focus was on children who were 9, 10, or 11 at that time. But in order to study more serious disorders, we used the whole age group. This led to talking about neuropsychiatric disorders in a broader way. It was a wonderful group to be part of. I was very fortunate in having Jack Tizard there. He, very generously, allowed me to take leadership of any aspects of this study, although he was always there in the background, of course, if needed. That was a wonderful experience. It provided a model of leadership that played an important part later on, which we'll come to later, in the way I tended to tackle things.

The Isle of Wight Study, of course, is still being followed up. I'm not involved with that anymore; Barbara Maughan is the leader on that. But it was a very productive time. I used to go down on a Sunday evening and meet with a group that evening, and then finish late at night. Then on Thursday, I returned to London to do my ordinary work, before going back there. I think my children were quite young at that time, and they felt like I lived on the Isle of Wight, but it wasn't quite like that.

Because there were so many different features to it, I think it had many lessons for all of us. For example, the total population studies played a major role in understanding how biological brain pathology influenced development. It's not that it had not been thought of before, but it was the first time it had been systematically studied. So that was exciting. And it's still, I think, relevant in the way people talk about it today.

Werker: Absolutely. You mentioned that it influenced your own leadership style.

Rutter: Yes, I think the key thing that I learned from all of this was that to make progress in research, it had to involve multiple disciplines. I saw it in the MRC unit that I set up—there is the section on genetics. The idea of interdisciplinarity played a key role. But also there was a recognition that it was useful to let younger people, and I was younger then, have a go in doing things their way. And you must have trust in the people you are working with to do that. That means you need to think carefully about making appointments. But, given that, interdisciplinarity for me had been crucial throughout. Am I a psychiatrist, or am I a psychologist? I guess I'm a bit of both.

Werker: That's true. You really have been a pioneer in interdisciplinarity and in letting younger people lead. Many psychologists think that epidemiology is “bean counting.”

In your Minnesota Symposium on Child Psychology lecture (Rutter 2007), which has been so influential, you argued that sound epidemiology, speaking of being interdisciplinary, was fundamental to developmental psychology. Tell us why.

Rutter: I still hold that view. I think the view that epidemiology is getting base rates of everything is an old-fashioned idea. Good epidemiology is looking at associations and functions in a much more complex way. That meant that the focus had to be not just on the numbers for people with a particular disorder but also on the associated features. To give a specific example, when Rett

syndrome was first discovered, I decided I ought to look back at the patients I had seen with what we would now know as Rett syndrome and see what I had said. I found, to my relief, that I said they have some features of autism, but they actually were rather different in all sorts of other ways, and I don't think this is a variety of autism. Of course, nowadays nobody would put Rett syndrome on the autism spectrum.

Werker: Right. Do you think that epidemiology helped with that?

Rutter: It forced people to focus on what was really there, rather than starting with a classification question. Of course, there are notorious examples of false claims, of which Wakefield et al. was the most obvious one. Wakefield was struck off the general medical register for the way he behaved, and he's still earning a good living from people who accept without question his argument of the role of the measles/mumps/rubella vaccine in relation to autism. A scandal, I may say.

Werker: That's interesting. That's an example of the lack of sound epidemiology and just spouting?

Rutter: Yeah. Obviously, there are times when just knowing what the numbers are is important. For example, when looking at the comparison of rates and different ages, or in different places. The example I would give here is perhaps a rather idiosyncratic one, but nevertheless, the way I used to do things was, give feedback to the teachers in terms of the research findings. And there was this lady in the fourth row back who's giving me a very hard time, and I thought, "I've got a hostile questioner here." She wasn't hostile at all, it turned out. She said, "We, as tutors, have got to know whether the children are the way they are because of what we have done to them, or because of the kind of children we admit to school. What I suggest is we set up a working group of practitioners and scientists to work together in looking how best to study that."

I recovered from my surprise, and she was good as her word, I may say, this Mrs. Pringle. But as luck would have it, in the middle of data collection there was a teachers' strike, and what she persuaded her colleagues to do was to carry on with the strike but to make an exception for the data needed for the research: "Let that guy go ahead." And that's exactly what she did.

Werker: So, she asked this question, and what study did this lead to?

Rutter: It led to a number of different studies. It led to a number of therapeutic interventions, which were tested. That was a different form of research, and I'm not an expert in randomized controlled trials, but I certainly make use of them. So it led to interventions, and if this was going to be done in a responsible way, that had to be the study of efficacy of the intervention. That, of course, seemed unusual at the time, but now it would be taken for granted by everybody.

Werker: That's just crazy. There are many different ways in which you were a leader in things that, as you said, we now take for granted. You were one of the first researchers to look at how the quality of schools can shape children's opportunities and development in your Fifteen Thousand Hours study (Rutter et al. 1979). Can you tell us what inspired you to move in this sociological direction, and what reaction did your work receive?

Rutter: I don't know that I described it as a sociological direction, but it includes elements of that. Its origins lie in the comparative study we did between the Isle of Wight and inner London. There are obviously big differences in rates of psychopathology, and it seems that it had to be investigated in a systematic sort of way. We did our best to do that. It's true that this had not been a field of research that anybody had taken very seriously. But I think people nowadays certainly would. I don't know that anybody would describe it as sociological. It is a study in which the study of institutions, meaning schools in this instance, was the focus. So that was an interest in trying

to explain a set of findings. It wasn't because I thought that we should move in a sociological direction; although in the sense we did.

Werker: This is one of your studies that I don't know. It's hard to know everything Michael Rutter has done. Did you focus exclusively on the differences in the schools or the broader populations, or being urban and nonurban? Can you tell me a little bit more about this study?

Rutter: Sure. We had to look at what was going on in families, as well as in schools, in order to make sense of everything. To that extent, it had a very broad reach, but it had to. Fifteen Thousand Hours was a fun study to do. The only battles I had were with my colleagues, who pointed out that, actually, the number of hours that children spent in school wasn't 15,000, it was 14,336 or something. The point is, it's a lot, and 15,000 hours has a nicer flavor to it. So, in the end, they accepted that. But it was an interesting study because it forced [us to look] more broadly outside the school in order to understand what was happening within the school.

Werker: That's fantastic. This is just another example of where you have made so many—not only breakthroughs in approaches to research that have now become sort of standard and accepted as just the way the field works, but also brought clarity to the concepts, to difficult, diffuse concepts, by coming up with terms that capture. That's been an amazing contribution.

We've discussed it so far in terms of labeling this Fifteen Thousand Hours and temperament. Before we go on, are there any other terms that you feel you've introduced or contributed to introducing that have helped that approach become part of the way we do our research?

Rutter: I certainly didn't introduce the term gene–environment interaction, but nevertheless, it played a very important part in my thinking—and much influence in this, of course, by my colleague Andrew Pickles, but also geneticists such as Ken Kendler in the States. Before that, people got stuck on what percentage is nature, and what percentage is nurture? I think all of that work persuaded people that it's actually a silly way of looking at it because, for a lot of it, if it's involving interactions, it has to be both. Moreover, both will add up to more than 100%, because the interaction term has to be included.

Werker: Right. Let's turn to your work on the heritability of autism.

Rutter: With the heritability of autism, it was suggested that it changed thinking in the field. I suppose in a way it did. I must emphasize that this is as much owing to Susan Folstein, who was a trained geneticist, as to me, who was not a geneticist. I am now, but that was a long time ago. And [the heritability of autism] was accepted, I think, for a variety of reasons. To begin with, there's a replication study by Ann Le Couteur and others that came up with very similar results. There were also family studies, which, although not able to be used for assessing heritability as such, did show that so many patterns were compatible with heritability. That was quite high.

I guess the lesson from all of that is that it's very rare for one research approach or one technology to provide all the answers. But what is helpful is trying to put them together to see what the overall picture is. And that's what I tried to do.

Werker: Can you just describe a little bit about the study with Susan Folstein (Folstein & Rutter 1977)?

Rutter: We got a sample that started with quite a small number. But at that time, we had very good cooperation from colleagues, so it grew to a much more substantial study. Susan trekked around the countryside, tracking people down and interviewing them, and where relevant doing testing. She was a very good colleague to work with. She's very hardworking, but she got this year on the fellowship in England, which she made use of in this way.

The study with Susan was not primarily concerned with heritability. It was concerned with estimating the different elements of genetics in shared and unshared environments. I also interacted a good deal at that time with Jerry Shields, who was working with Irving Gottesman. Now, Gottesman was a very intelligent and able, but a very bruising, personality, whereas Jerry was a very gentle personality, and so it was fun working with him.

Werker: So you were able to bring them all together, even though they had these very different personalities.

Rutter: Yes. How successfully, I don't know. But yes, it worked well primarily because Jerry was very able, but he also had a personality that worked, as it were, toward conciliation and constructive moving ahead. That doesn't always happen.

Werker: How were the findings from the study with Susan received?

Rutter: The findings from the study were accepted pretty well, because, to begin with, we did not have the extreme emphasis on psychoanalytic ideas in a conflict and all the rest of it, as you did in the States. But more particularly, we were using a range of different methodologies to test out all the ideas. I think that is something that is very important to do. You can't rely on one approach only, or very rarely can you do that.

Werker: Convergent methods. That's interesting that you didn't have that sort of "cold mother" tradition in the UK to fight against.

Rutter: No, we didn't. I wouldn't say it was totally nonexistent, but it was certainly never dominant, and would not be the way most people thought about it.

Werker: That's really interesting. Is that what first inspired your interest in nature–nurture, or was it many parts of your work?

Rutter: Yes, it did influence much of my work, but it was also the people I worked with. Lindon Eaves and Ken Kendler in the States influenced me a lot. They're both provocative thinkers, but creative thinkers and very much people who want to put their ideas to the test. That, I think, is the way it should be. Robert Plomin, who was in the States initially but has been in the UK for a long time now, played a major role in that, too.

Werker: I wish I could describe the elegance of your analysis of the interaction of nature and nurture, how you weave together high-level metaunderstanding with quite detailed quantitative analysis.

Rutter: I think on the one hand you have to have quantitative analysis, but on the other hand qualitative research has a role to play as well, although I think it would be a mistake to say that simply counting quantities is an answer in itself. Understanding is definitely helped by qualitative studies. Qualitative studies can't give you answers as to how much of anything there is, but they can help you understand how it works. That's the important part of research.

Werker: I love it. I also love your work on adoption—I mean, I love all your work. And there's just so much, including your work with Romanian adoptees into the UK, which provided striking new insights into the physical and psychological factors for which there is recovery and those for which there's lifelong vulnerability as a function in part of age of adoption. Do you want to talk about that work and what you consider the most important theoretical and practical conclusions?

Rutter: That work was greatly helped by having three studies. I was only personally involved in one of them. But I interacted with those running the other two studies. There's the Romanian

study, which I was very much involved with (Rutter 1998). There's the Greek study from Panayiota Vorria (Vorría et al. 2006), and there's the Chinese study. They had very different samples but asked very similar questions. The ability to go across samples was very helpful. I think that to remind [us] that comparisons across samples, as well as across other things, is a very useful thing to do.

Werker: What was similar and different about the samples?

Rutter: The degree of deprivation was vastly greater in Romania than it was in the other two countries. The others involved institutional care in early life, but they did not involve the profound deprivation that we found in Romania. That enabled one to conclude that, of course, the separation involved may well have played a part, and probably did, but it was the deprivation that was the main risk factor.

Werker: That was one of the main conclusions, the deprivation. Was age a factor in there?

Rutter: Yes, certainly it was, but not in a very straightforward sort of way. This is a reminder that it's unusual in research for there to be one answer that deals with everything. It would be nice and tidy if that were the case, and very occasionally it is, but it isn't usually like that.

Werker: Right.

Rutter: The study, incidentally, did get me very interested in the use of so-called experiments of nature as a research strategy. That's been an interest of mine in the last dozen years. It's not something that is talked about much in either the psychological or the psychiatric literature, but it should be.

Werker: Are there experiments of nature that you would like to share, that you used as a way to understand development?

Rutter: The question of when there had to be intervention at an early age is one of the things we looked at. It is clear that there were advantages in the intervention being early. But there were examples where it was started quite late and was surprisingly effective. So, the notion that everything happens in infancy and nothing much in the years after is something we were able to very firmly reject, which I think now most people would.

Werker: In your work on adoptees, you also advanced our understanding of attachment, and identified a sort of new vocabulary of the attachment relationship.

Rutter: Attachment became almost a religious creed among some researchers. But, actually, the experts in this field would agree with me that, attachment, firstly, to be a myth, isn't just a thing; there are qualities of attachment. The Mary Ainsworth work using the Strange Situation is a very good example, where she started with a simple notion and was forced to change as a result of her own findings (Ainsworth & Bell 1970). Many may know, somewhat similarly, I did the same.

People now are less inclined to say, "Is this child attached?" That's too crude a way of thinking about it. Of course, it is important, because humans are social animals, that there are close relationships that develop, of which attachment is one key element, but not the only one. I'm an enthusiast for attachment, but a guarded enthusiast in that it worries me how people are too ready to say it's all due to attachment. It rarely is.

Werker: These are such important cautions, Michael, important insights and important cautions. I'm curious about how your clinical work has influenced your research, or vice versa.

Rutter: The obvious example of that is in terms of the finding clinically, which came up simply because of two patients that I happened to see, with evidence on disorders such as disinhibited

attachment, quasi-autism, and so on. That was a surprise to all of us because the general teaching at that time was that, yes, institutional care will have effects. That's not the surprise. The surprise is that it wasn't in terms of the ordinary run of emotional and behavior disorders; it was in terms of the unusual patterns. We were just starting data collection, and so we hastily put together a set of measures dealing with those features into the research protocol.

Werker: That's a wonderful example of how your clinical practice influenced your research and vice versa. I'm sure that research has influenced your clinical practice as well.

Rutter: Oh, it's bound to. As far as I'm concerned, they're really two sides of the same thing, because what am I? Am I a clinician or am I a scientist? Well, I hope that I'm both.

Werker: Yes.

Rutter: I don't really separate them in my thinking. Although there are examples, such as the ones we've touched on, where it is mainly coming one direction rather than the other.

Werker: Michael, were there experiences from your early life that you believe influenced your decision to ultimately study child development?

Rutter: Not really. I moved about a lot in my early life because I was evacuated to the States during the war. So I was away for four years. What I learned, I suppose, is that if one was with loving people, and I was very fortunate in that I was with loving people, then that was all right, it's no big deal. My sister, unfortunately, had less-good experiences and hers were not happy. In the family she was with initially, the mother became pregnant and it was too much to have one more child, although they were an affluent family with a big house. It was pretty ridiculous.

The period during the war, I didn't see my sister at all until it was agreed that she should come and join me with the Rhoads family, which was the family I was with, because otherwise [we] had no idea about each other. I mean, we knew we existed, but [having her come to the Rhoads family] was good thinking. The Rhoads had said from the very start that they were very happy to have both of us, but the powers that be wouldn't agree to that.

What one learned quickly, then, was that in a fostering situation like we had during the war, the power lies in the hands of bureaucracy, not in the hands of anybody else. However, for me, I was lucky. I had good experiences with very nice people. Although they'd never met my parents, they introduced them into the supertime conversation every day. So, I didn't feel that I was away, in a funny sort of way. I think that had an influence in a positive way that I learned that you could remain in touch without being physically together. I suppose that did have an influence, albeit a positive one.

Werker: That's amazing. So you were there for four years.

Rutter: Yes. We came back, of course, at a very silly time, although with no way of knowing that at the time, in that it was just before the so-called doodlebugs were bombing English cities.

Werker: My goodness. And you stayed in touch with that family, is that correct?

Rutter: It is correct. Yes. I remained in touch until they died.

Werker: That's really nice.

Rutter: It took some time for them to realize that, although they called themselves uncle and aunt, actually, they were my parents during those four years—not to replace my biological parents, but alongside them, as it were. It took a while for them to realize that, actually, as far as I was concerned,

they *were* my parents alongside my biological parents remaining in England. But it all worked out well.

Werker: That's pretty profound and something we should all remember going forward.

Rutter: Yeah.

Werker: While we're on these very personal questions, do you mind me asking what it was like being knighted?

Rutter: It's a funny business. It's a great honor, of course. It involves kneeling down in front of the Queen, as it was then. The Queen, for the last few years, because she's pretty old now, she hands this off to other people to do it. She has a few words with people, but one of the very impressive things is that she doesn't spend time talking with people like myself who regularly move in circles where I do meet important people. Instead, she talks longer with ordinary people who've done extraordinary things, and that's the right way of doing it, I think.

Werker: You're amazing, Michael. We still like to call you Sir Michael.

Rutter: Please, no. I'm just Mike.

Werker: I know you're just Mike. What aspects of your work have you enjoyed the most?

Rutter: I suppose I've enjoyed the studies that brought surprises. I've never understood why people wanted to replicate their own findings in the sense that if they guessed right, it means the whole of their career was a waste of time because it was already decided at the beginning. So, which studies? Well, the studies of adoptees—the Romanian adoptees, and I had some involvement with the Chinese and the Greek adoptees—brought surprises, and that made it all very interesting. I liked the challenge, as it were, of finding out something I didn't know. That's what made research interesting in the same way as clinical work, similarly, bringing surprises and challenges.

Werker: You certainly weren't shy about reeducating yourself in new disciplines and subdisciplines across your career.

Rutter: It's been a fun career. That's the way it should be. Hard work, of course, is crucial. You can't have a good career if you don't work hard, but if it feels like a drudge and you're not enjoying it, that's not a success either.

Werker: I agree.

Rutter: In terms of—not quite what you asked, but let me turn toward this for a moment. The one area where I feel I failed was in developing measures for the broader phenotype, the so-called lesser variant, whatever language one wants to use. The team I was working with was given the responsibility to develop the relevant measures and set about it by tweaking, as it were, the Autism Diagnostic Interview (ADI) and the Autism Diagnostic Observation Schedule (ADOS), rather than recognizing that those were very good instruments for their purpose but that their purpose was to diagnose, if I can call it so, autism proper, not the variants. I should have done that; I was basically in charge, although I had delegated responsibility. And it still needs to be done.

Werker: That's interesting. Are you referring to conditions like Rett that show some of the symptoms of autism or just something that you would really diagnose as autism, but with variants?

Rutter: Both really, I suppose, but predominantly the latter.

Werker: That's interesting. You did do that with attachment. I don't see it as a failing. I see it as some incomplete work that still needs to be done.

Rutter: That's a very nice, kind way of putting it. Thank you for that.

Werker: What advice would you give to researchers and clinicians starting out today?

Rutter: That's an interesting question. I think you want to have, as a researcher, a topic that you become an expert on. It doesn't matter what it is, particularly, but that you are the person whom other people turn to for advice on that topic. I think also choosing a good mentor is crucial. Now, by a mentor I mean somebody who guides you in the research you want to do, not supervises you. That's different; it's a necessary step, but it's a different step. The mentors that I had were not psychiatrists. Lee Robins, Eleanor Maccoby, Jerry Kagan—whether they would have labeled themselves as mentors, I'm not sure, but they were, in the sense that I learned from them.

Jerry, of course, is still producing. He said he's produced his last book, but I'll believe that when I see it. And in looking for mentors, you want somebody who takes your needs first and foremost, not uses you as their own research assistant. That's an improper role. I think you want somebody, too, who is iconoclastic. Is that a necessary feature? Possibly not. But the people that I learned most from were iconoclasts. Sir Leon Eisenberg was certainly in that position, and Lee Robins. So it's an important step.

Do you want just one mentor? No. I mean, I've had several. They fitted what I needed at the time, and all, in fact, became personal friends. And, of course, that is nice. I did remain in touch with them for as long as I could.

Werker: I think that's really insightful. I think that's important for young people to hear, people at any stage in their career who are branching off in new directions, really. Just as you could accept having another set of parents along with your biological parents, you're saying it doesn't devalue one mentor by having additional mentors as needed.

Rutter: Exactly. That's a good parallel. I like that. Did this mean that the people who are fulfilling that role felt in competition with each other? I don't think the thought would ever have occurred to them.

Werker: This leads to the next question, and one that has actually come through in many of your answers to questions about your work. But let's ask it head-on, which is: Can you speak about your leadership and mentoring style?

Rutter: Obviously, I can only talk about what I tried to do. What it felt like to people at the receiving end of my leadership style is for them to say. But I think that it's crucially important to see that you're there to help the person who is being mentored. You're not there to use them as a research assistant. Does it help if they're iconoclastic? Yes, I think it does. Not a central characteristic, but if you're moving ahead in the field, then you want to be able to question the given wisdom, and all of the people I had were of that ilk.

Werker: How about your leadership style when you were leading bigger teams? For example, in some of the adoption studies, in some cases you were involved yourself, but in other cases you were involved more in a leadership or consultancy style. How would you describe your leadership style there, rather than as a sort of one-on-one mentoring?

Rutter: The Romanian study I was deeply involved with throughout. I'm not now, because it's been taken over by Edmund Sonuga-Barke, and that was absolutely fine. He was ready to do that, so I stepped aside. He asked me to remain on his advisory group, and after some reluctance,

because I was worried that I would get in the way of it, I accepted. Some of the other studies, the Greek study and the Chinese study, I was always wanting to step aside. I had no responsibility for running either of them, but it doesn't mean that you can't help and ask questions. I've enjoyed that.

Werker: You've played a leadership role in a number of organizations and bigger initiatives as well. Do you want to talk about that at all?

Rutter: Yes. I suppose an example is the Wellcome Trust, where I was the deputy chairman for a while. Did I enjoy that? Yes, I did. But I enjoyed it more in the times after Jeremy Farrar took over as director, rather than before it. He was very good. He was distinctive in being the only director, as far as I know, who asked those of us who were there for our opinion as to what needed to be done. That's a reflection of his confidence, that he could ask a question like that with the risk of being told that everything needs to be turned upside down. Nobody said that, of course. And it didn't need to be turned upside down. He was a very good leader.

I played quite a big role in Nuffield [Health]. That was different in the sense that they didn't use their trustees and other senior people in that sort of way. Each organization has its own style, and so long as one recognizes that, and they recognize it, then that's fine. Coram is another example. I was happy to be involved because they pioneered work on adoption. That's certainly something I wanted to be able to help with if I could be useful.

Werker: You also contributed to a number of social policy changes in the UK, some of which were later adopted around the world. Would you talk about that a little bit?

Rutter: Am I at ease taking a political role? The answer to that has to be no. I'm not particularly—I'm not a politician. If I get squeezed into taking on a political role, then that's not the right place for me to be. That's not a strength of mine.

Werker: But much of your work has been implemented in policy.

Rutter: Oh, it has. Yes. That is true.

Werker: With the rapid social changes being brought about by COVID-19 and the widespread recognition of systemic racism, are there emergent research questions and clinical interventions that you think are particularly urgent for the next generation to be concerned about? And are there implications for developmental psychology and clinical work?

Rutter: There certainly are. Dealing with the virus, of course, needs virologists and people of that kind, and that's not me, but it's the biggest threat we have ever faced. Certainly one wants to do research on how to deal with that. Developing a vaccine is one of them.

Another aspect of the virus that is very important, I think, is the amazing [number of] individual differences. I mean, there are individual differences in all stresses and adversity of all kinds, biological, psychological, sociological—but they seem to be bigger with this virus than with anything else. In the SGDP, where I work, I don't know how many cases we had, but something like 20 or maybe more. None of them, however, have died. Indeed, none of them remained seriously ill for more than a week. Why is that so? I don't think we know at all. One tends to think there must be different strains of the virus, and we need to focus on that possibility and investigate it. Is anybody doing that? I don't know. I mean, I don't know of people doing that, but maybe I just am not aware of what is going on.

Regarding systemic racism, it's very sad that racism is still with us, but it is. I'm not quite sure how one can deal with that, but clearly we must deal with it, because it's unacceptable to have it left undealt with.

Werker: It's so complicated.

Now, a fun, last question. There are so many spectacular walks in the Lake District. If one could walk in your shoes, where would you send them?

Rutter: In my climbing days—not as a rock climber; I've never been a rock climber—I used to enjoy going up high peaks. Going up Halls Fell to Blencathra is one of the nearest ones to Keswick, and it's doable. Great Gable would be another. Walking around Derwentwater, which is about a five-mile walk, is also very interesting. And walking around Buttermere is also very interesting. The guidebooks produced by Wainwright are the world's best guidebooks ever. I know that's a strong claim, but I'm pretty sure nobody would disagree with it. Have you seen the guidebooks?

Werker: No, I want to now.

Rutter: They're wonderful. [Wainwright] sketches wherever he goes, and he won't have any of the books printed, because he prefers to have them in his handwriting, which is very, very neat. He's a great man. So, there are lots of interesting places to go. If you're going to be realistic, as you grow older, as unfortunately we all do, and provided it's within your capacity, then go for it. There are so many places in the Lake District. It's a very beautiful part of England, and I miss going up there. On the other hand, it's a seven-hour journey to get up there. So it's no longer feasible.

Werker: That's too bad. I hope there are some nice, pretty, maybe not too onerous walks near your home.

Rutter: Yes. There are some nice ones. That's true. There are quite a few parks, and this is one of the big differences between New York and London. New York's got Central Park, but that's more or less all, whereas we've got parks galore. Some of them are little, but I think they make for a more welcoming environment to have many parks rather than just one big one.

Werker: That's fantastic. Is there anything else you'd like to add, Michael?

Rutter: Only to say how much I've enjoyed this interview, and lovely talking with you again.

Werker: Absolutely wonderful talking with you as well.

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