Josef Perner

- Born May 1, 1948, in Radstadt, Austria
- B.A. in Psychology (1967) University of Salzburg, M.A. (1974) and Ph.D. (1978) University of Toronto

Major Employment:

- Faculty Member in Experimental Psychology, School of Biology, University of Sussex: 1979-94
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- Cognitive Neuroscience

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SRCD Oral History Interview

Josef Perner
University of Salzburg

Interviewed by Ian Apperly
In Nottingham, UK
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Apperly: So this is an interview with Professor Josef Perner at the University of Salzburg. And the interviewer is Doctor Ian Apperly at the University of Birmingham in the UK. And we are holding the interview on the twelfth of September 2008 in the town of Nottingham in the UK. Okay. So, Josef, could you begin by describing a little bit about your family background and then any childhood experiences that may be of interest?

Perner: Yes. Well, a bit about my parents. My father was born in 1900 and grew up in the sort of pre-industrial or rural setting in Austria in the village of Ramsau, which is in sort of central Austria.

Apperly: So it's like -- I guess people know where Vienna is. Is that north of Vienna, south of Vienna?

Perner: Oh. Austria is sort of a sausage-like east/west structure and it is in the center so that means it's west of Vienna, because Vienna is in the extreme east of Austria.

Apperly: Right.

Perner: And it is near Salzburg, sort of about 90 kilometers south of Salzburg.

Apperly: Okay.

Perner: That locates it. And so he was a mountain farmer's son who had an interest in, a farsighted interest, in exploiting the tourism there. And there's a famous mountain there with a large, interesting drop for mountain climbers. And so he became a mountain guide on that mountain and also built a mountain hut there. This is important because he did a rescue operation, rescuing some climbers that got stuck in that wall; because of that rescue operation he got an award from the Republic of Austria. And that was the reason why he got offered to run a mountain lodge in a nearby mountain pass. That

was a fairly lucrative thing to have, because that was one of the few and very rare places where one could go skiing in winter.

Apperly: Right.

Perner: So that's where he was in the 1920's. And my mother, we know very little about her. She was born in Vienna. We don't know her father and her mother died very early, and then was raised by her aunt who was married to a very wealthy industrialist. But they didn't get on very well after she married my father and so we don't know much about that. She didn't like to talk about this.

There were also serious political problems there, because the center of Austria was very fascist and her uncle, or a husband of her aunt, was of Jewish origin and didn't really survive the war. In any case she basically came to my father's mountain lodge as a rich guest and then fell in love with her skiing instructor and that's why they married. And so my father basically had a very basic education of four years in elementary school, whereas my mother, I don't really know what education she had but occasionally she talked about having private teachers and was fairly well educated and valued education and arts, whereas my father valued education but only for very straight, practical reasons. So the only reasons for him to go to the university were to either become a medical doctor or a lawyer. And all the other people he knew who went to university for other reasons were sort of no good people; in particular, sort of an interesting link is that there was a very wealthy Viennese doctor, a guest in his mountain lodge. And he actually was their best man at their wedding and also a successful son who was a proper medical doctor. And then the youngest son was a not very successful person. He had a university degree but all he did was go swimming with his gray ducklings. And so that was, you know, a bad example of somebody who got a university degree and didn't have a proper job.

Apperly: Yes. So you actually grew up living in this mountain lodge.

Perner: Oh. Yes. Right. I was born in the nearest hospital, which was about 20 kilometers down into the valley, the nearest town, but basically the first ten years I grew up on this mountain pass. And the lodge was about -- I mean, the mountain pass had an old Roman road, actually. But the mountain lodge was about two kilometers away from there. And in winter you could only reach it by ox cart.

Apperly: So how did you get to school?

Perner: I walked the two kilometers to go to school. There was a little school. They only had one classroom for eight different grades. So there was one child per grade about. Ours was the strongest to have four people.

Apperly: So it was a very, very small, local school.

Perner: Yes. Right. Yes. So the schooling was a problem there also because the only teacher there was ran the local pub and in winter, in the high season was not very awake in the morning. So after two years in elementary school there they put me down to the village where my father grew up because that had a larger intake and they had the proper--

Apperly: But then did you have to board down there? Did you have to live away from your family?

Perner: Yes. Yes. With relatives or with somebody down there, and it was nearby so it wasn't too bad. But then when I turned ten there was -- since my mother really -- I had two brothers who were substantially older. They were born before the war and then I had to wait until after (the war).

Apperly: Right. Right. Yes.

Perner: And they first of all couldn't afford it and also there was immediate need that the brothers sort of worked at home. And I had the luxury that my parents were a bit wealthier when I came to high

school age and my mother always valued education so I was sent to boarding school, because there was no higher education in the immediate vicinity. So it did mean that I had to go away from home when I was ten years old and then stayed nine years at this boarding school.

Apperly: And where was that? How far away?

Perner: And that was also in a fairly rural area. It also had a very interesting history. It was founded by a Russian immigrant, who was a boy scout and said that he was kicked out by the communists but said that it was one valuable thing they did was trying to do away with the blue and white-collar workers' difference. So he said we can do that, too. We have a high school where they will not only get the regular high school degree but we also learned a profession.

Apperly: You mean a practical profession?

Perner: Yes, a practical profession. I took the least practical one; that was radio mechanics. But it was intellectually quite a useful thing, because you learned how to problem solve, also a bit of carpentry and so on would have been better.

Apperly: So did you have any experiences apart from going to the university? Did you have any military experiences or early work experience that rather than--

Perner: Well, I was supposed to help out at home but I hated it and so reluctantly in the holidays I did work a little bit making coffee for the guests, because my father later had started his own hotel on the mountain pass. But I always argued. I sort of worked properly at school and therefore I should have my vacations. I had a -- then after high school I had the obligatory military experience.

Apperly: Okay. So that was the obligatory? Yes. Yes.

Perner: And in order to make it more -- the real problem was that it's very boring. So they promised, instead of the regular nine months if you do a year then it gets more interesting. So I volunteered for a year but it wasn't particularly interesting.

Apperly: So, Josef, what early adult experiences were particularly important for your intellectual development?

Perner: Well, we don't have college in Austria so this was still high school. I think there were two important incidents. The one was that we had two years sort of minimal instruction in philosophy and psychology, a mix of those. And I had took to especially philosophy. And there was a very smart guy in the class below me who later became a mathematician. And we worked our way together through Wittgenstein's Tractatus--

Apperly: Wow.

Perner: --in high school. And then I wanted to -- envisaged that I want to study philosophy. However our philosophy teacher then took us to Salzburg University nearby because a famous French philosopher by the name of Marcel gave a talk there and that put me off philosophy. It wasn't Marcel's talk that put me off, it was the local professor's 15 minute introduction to Marcel's talk that I found, even as a high school student, so silly that I thought I wouldn't want to study philosophy there. And that's what made me later, after the military, opt for psychology because we were taught that psychology is close to philosophy but provides a bridge to the natural sciences.

Apperly: And so I was going to ask the nature of psychology in Austria right at the time. So did that include psychoanalysis, for example, or would we recognize it as sort of this kind of psychology--

Perner: Yes. And Austria has a tradition that you basically go to the nearest university. There was no sense of good and bad universities. And in Salzburg that was sort of an old university that basically died out and was restarted in the '60s like many other universities. And there was a new psychology department with one professor and he called himself a hermeneutic psychologist that is also close to philosophy and so on. And there was no psychoanalysis. In fact, the rest of Austria was dominated by very strict neurophysiological psychologists. And there was no Freud taught anywhere in Austrian universities. It was the University of Salzburg professor who later got a Russian immigrant by the name of Caruso to teach psychoanalysis. So he prided himself on introducing psychoanalysis to Austrian universities.

Apperly: So what were the origins of your experience in child development? When did you develop--

Perner: I started in psychology at Salzburg and got interested in concepts. I also took voluntarily a lot of logic courses and philosophy of science and a bit of philosophy of mind and always wondered where concepts came from. And then looked at the adult concept acquisition literature and that was at the time basically Ach's paradigm in the hand of Jerry Bruner, which wasn't particularly exciting. And then I sort of realized that Piaget was looking at real concepts.

Apperly: Meaning what by real concepts?

Perner: Yes. That -- like quantity and so on.

Apperly: Okay.

Perner: And not the concept of red and green objects.

Apperly: Yes.

Perner: That was sort of what Bruner's working with in the then concept formations studies that were limited to this.

Apperly: Okay.

Perner: But what does the concept of quantity constitute and what do you have to understand to have it and so on? That was an interesting question.

Apperly: I mean, did you meet Piaget? Were you directly influenced by Piaget?

Perner: No. No. I never met Piaget. (Editorial comment: Actually, I did meet him, but many years later.) I just started to get interested in Piaget and read a lot. And then had done all my university courses except at the time the only thing you could do was a PhD. There was nothing less than that.

Apperly: Okay. You mean for a degree.

Perner: For a degree.

Apperly: That was what you did. It resulted in a PhD. Okay.

Perner: Right. Okay. It was sort of more like a master's degree but it was sort of an old system.

Apperly: Yes.

Perner: And--

Apperly: Let's see how we go. I think--

Perner: So I had done everything except my thesis and then realized most of the literature is in English that I should go at least for a year to an English speaking country to polish up my English and become decent at reading and working in English. And so I applied for -- that was still possible at this time -- for scholarships in mostly North America and then ended up in Toronto with the intention to stay for one year but they accepted me for a two year master's degree so I stayed for two years. And then realized that the educational qualities were different and stayed for a PhD there.

Apperly: Okay. So were there particular individuals there who you were working with or who you were interested in--

Perner: Yes.

Apperly: --around?

Perner: My supervisor was Anatol Rapoport who was actually a game theorist, mathematician and game theorist. So I got a good introduction into game theory and tried to combine that for my thesis for my developmental interests that he knew nothing about. So, in fact, I did something like part of my thesis was two by two games with children.

Apperly: Right. Okay.

Perner: And then there were other important influence, although he unfortunately died, that was Dan Berlyne. Because he actually worked with Piaget for a year trying to sort of make sense of Piaget in terms of neo-associationism. And so I was very strongly influenced by him.

Apperly: Was he in Toronto as well?

Perner: He was a professor at Toronto and on my thesis committee.

Apperly: Right. Right.

Perner: And other people were both Bob Lockhart, the memory person, and Barney Gilmore, who actually was interested in Piagetian theory.

Apperly: Right.

Perner: But my main supervisor was Anatol Rapoport, and so that's how I ended up doing something that nobody was working on and didn't have a big reception of my thesis.

Apperly: So are there particular political social events that have influenced your research?

Perner: Well, not really. I mean, except for I can think of some private experience, that when I was still studying in Salzburg I went to Ontario to pick tobacco for the summer. And tobacco picking meant that you were sitting with four other chaps on a machine and sort of grab leaves as quickly as possible, not too many, not too few. And then that led to lots of sort of social conflict between those four because one was too lazy and then the farmer complained and so on. And that I remember stimulating my interest in small group interactions and game theory, but I didn't really pursue it in the long run.

Apperly: And so would you say that the development of your ideas in the field of child development, has that sort of gone forward in a linear progression or have there been particular critical turning points where you've changed direction or method or theory.

Perner: Well, yes and no. I mean, in some sense I can claim that I am still working on the same problem that I started out with, which was, I think, sort of explaining Piagetian findings around the age of four to six years; for instance**,** the class inclusion question. Why is that so difficult? And I was still working on those problems and seriation problems and so on. And then Heinz Wimmer started research on children's understanding of stories and deception and so on. And so I worked with him there and that then changed my interest into theory of mind. But in many ways I was pursuing the same interests.

Apperly: This was sort of more or less before theory of mind existed?

Perner: Well, yes. And some people wondered why -- and we did it in a sort of Piagetian tradition.

Apperly: Yes. Yes.

Perner: But I think what marks theory of mind as different from Piagetian social cognition is that it took it's theoretical influence from the analytical philosophy, the philosophy of mind and language, and because I happened to have a somewhat above average background in that it came in handy and--

Apperly: Sure. Sure. So I think we've just covered your primary interest in child development at the beginning of your career. So I think you just talked about some continuities. Are there any specifics shifts where you sort of changed your view or changed the way that you were working? Have there been sort of formative moment that's changed the way that you--

Perner: Yes. Not drastically. Sort of basically pursuing the original ideas.

Apperly: Yes.

Perner: But if you look at it from one way, but in another way I sort of touched on a lot of different areas. So there's always some core interest that seems to be similar across all of them. So it changed from the ability to understand seriation, to theory of mind, to counterfactual reasoning and then to pragmatics and language and so on. So one could claim I did a lot of different things.

Apperly: Sure. But there is a sort of unifying theme where they fit together.

Perner: Yes.

Apperly: Okay. So could you say a bit more perhaps on the same theme, really, about the strengths and weaknesses of the work that you've done, the theoretical contributions that have been made?

Perner: Okay. The main works that trying to figure out what conceptual change basically, but I still haven't solved that, and in particular focusing on this age from four to six.

Apperly: Yes. So why did you end up working on that particular age range?

Perner: Oh. Because of the Piagetian tasks that I started to analyze, like class inclusion and seriation and so on. And then once you've developed sort of theories of what the mental representations are that younger children, or how representations have to change in order to master those tasks you started focusing on this area.

Apperly: Okay.

Perner: And also then Heinz Wimmer's research on story understanding happened to be around the same age. And so the shift to theory of mind stayed in roughly the same ballpark.

Apperly: So is the focus on that age range almost incidental in that case. It's just a fact of history rather than because you think there's a particularly interesting set of developments going on at that age? It might mean that you could've focused on another age with the same--

Perner: Yes.

Apperly: --similar questions in mind.

Perner: Yes. Yes. But at the time most Piagetian research was on that age range.

Apperly: Sure. No. No. Of course. Yes.

Perner: Yes. But there was also infancy but that's a -- well, I -- yes. It was an accident.

Apperly: Sure. Sure. And so what aspects of your work do you think have made the largest impact on the field of developmental psychology or I guess outside of just developmental psychology as well.

Perner: Yes. But the largest impact was basically the research with Heinz Wimmer on false belief understanding and this '83 paper on cognition and then related papers. And then I also hope that my theoretical analysis of what goes into this and that was mainly done in my chapter in the Astington et al. book in '88 and then expanded in my book in '91.

Apperly: Yes.

Perner: And I hope that another important contribution made to date was the work on implicit/explicit understanding. And the largest thing I have done there was to get to work with Zoltan Dienes on our *BBS* article in 1999.

Apperly: Yes. And that work is still quite under development also.

Perner: Yes. Yes. Right. And we wanted to do more but I have to admit that, yes, I think it is now recognized that that distinction also becomes extremely central in cognitive development and with infant understanding that seems to be there but has to be rediscovered with some different knowledge about the same domain again later. But I couldn't really get our approach to that issue together with this development. And I think now I have a better idea and hopefully we can develop it.

Apperly: Okay. So we're starting again from question one in the second section. So, Josef, what were the primary interests in child development at the beginning of your career?

Perner: The primary interests in child development?

Apperly: Yes.

Perner: Well, I wasn't really interested in child development but in concept formation. And that had to do with my interest in philosophy of science and philosophy of mind. And then I realized that the actual literature on concept formation in psychology was basically the Ach paradigm in the hands of Jerry Bruner. And that wasn't particularly investigating interesting concepts. It was sort of whether you could sort objects according to some combination of green and color--

Apperly: The Ach paradigm is what?

Perner: I think it was Ach who started this, that he investigated concept formation by people having to learn that objects with different properties -- size, shape, color -- that they have to learn which objects belong together, sort of a Boolean combination of properties. And I felt those are not really

interesting concepts and then discovered that Piaget had something much more interesting to say because he was investigating how children acquire concepts like quantity and the concept of object and so on. So those are real life objects and not some arbitrary combinations of properties. So that's why I got interested in Piaget and basically became a Piagetian.

Apperly: So studying in Austria you had exposure to all those different ideas from Piaget and from Bruner?

Perner: Not very much actually. This was sort of thinking that there was -- of course it was mentioned but there was no Piagetian or no developmental psychologist there who did cognitive development at the time.

Apperly: Okay. So are there particular continuities in your work that you think are very significant? So you started off with an interesting concept and is that a really continuity that's gone through--

Perner: Yes. Yes. Right. So I'm still known for claiming that children's problem with the false belief is a conceptual problem. So, yes, there is perfect continuity in this in some sense. But the way I looked at it may show some discontinuities and continuities. So the first thing was that I, for some reason, started concentrating on Piaget's stages, whatever it was called, the operational stage where children acquire concepts like class inclusion and seriation and quantity and so on. And once you started thinking about cognitive prerequisites and cognitive structure necessary for doing those tasks then you become an expert on that age. And I guess that's stayed with me until now.

Apperly: Okay. Yes. Yes.

Perner: So, yes, I did something else for my thesis because Anatol Rapoport was my supervisor. And so I tried to make a bridge between my Piagetian interests and his expertise in game theory and probability theory. And then after that I went back to doing some more Piagetian topics like children's seriation. And then, oh, I wrote a book with Heinz Wimmer, a German textbook on cognitive psychology, because he had a contract from some German publisher and so he asked whether I wanted to help him to write that.

Apperly: Right. And was that when you began to work with Heinz?

Perner: Yes. No, but Heinz and I knew each other as students in Salzburg but then sort of just had personal contact. And then our collaboration actually started during my last year in Toronto, because I had finished my thesis but still had a scholarship for another year and used that writing this book with Heinz basically. But that was important because then we started sort of collaborating on a serious basis. And then he got a grant from the VW Foundation to do some research on children's story understanding and he asked me again whether I wanted to help him to design the experiments. And he realized from his previous research on story understanding which focused on understanding causality in the Piagetian tradition that the really interesting things about most of the children's stories is not causality but is deviousness and interpersonal interaction like deception and counter deception in the German children's story of Hänsel and Gretel, and that's what got us into theory of mind.

Apperly: Okay.

Perner: So we then started taking those deception cases apart and said, "Okay, deception involves creating a false belief." And so that's how we were just prepared to do a false belief study, when we got wind of the *BBS* article by Premack and Woodruff where some philosopher suggested to do a false belief study, and we already had done something or were about to do something very similar. But that, of course, made it more elegant.

Apperly: So that was a historical coincidence, really, those two things just happened to come together?

Perner: We were just there with the right interest at the right time and that just merged. So this was a sort of shift away from the sort of typical Piagetian interests I had to theory of mind. But the sort of underlying and cognitive analyses still stayed very much the same.

Apperly: Sure. Sure. Okay. So on the same theme really so -- I mean, I guess one of the strengths -- one of the things you are best known for is the work on theory of mind. So can you say something about the strengths and weaknesses of that work and the theoretical contributions that have come together with it?

Perner: The strength of this work. Yes. I think the strength is that I think it was together with Alan Leslie that we brought in a new theoretical basis to all of this, drawing from analytical philosophy, philosophy of language and mind in particular. I think nobody else in the developmental group really did this. So that, I think, was an important new contribution. And, of course, what was important is the empirical work I did with Heinz Wimmer and the follow up of that. And then the theoretical stuff were the two central things, I guess, are my early paper in the Astington book and then that sort of elaborated in my '91 MIT press book.

Apperly: Yes. Okay.

Perner: Yes. I think those are the main contributions.

Apperly: And so would you say that that's had the largest impact? And what would you say is the current status of that?

Perner: The current status of that?

Apperly: Yes. Yes.

Perner: Yes. Well, I'm in the strange position now, of course, as you know a lot of research has been done on this and recently it really took up again with the discovery that even infants have some theory of mind understanding and so on. But basically and in the largest and sort of in the central claims I still find myself with my old theory. Of course, you realize that there are various things that you didn't think worked that way and you have to adjust to it. But in my understanding even this early infancy could still be fitted to my original theory. So in some sense I think it still holds up.

Apperly: Sure. So in terms of your more significant publications, I mean, obviously the '83 article with Heinz Wimmer was sort of very formative for what you then went on to do.

Perner: Yes.

Apperly: I mean, are there other papers that you'd say are particularly representative of the thinking that you've had in your work?

Perner: Yes. There were several sort of theoretical contributions, which usually don't appear in journals because it's difficult to get them into there and you typically do it in edited book chapters. Of course they are more lenient there. So yes. So it was this Astington chapter and then my book, and then I tried to sort of expand my analysis into more general terms addressing the general problems of mental representation and focusing in particular on the implicit/explicit distinction. And that culminated so far in a *BBS* paper with Zoltan Dienes in '98, I think.

Apperly: Yes. And that's work that's very much still in progress?

Perner: Yes, even though that's ten years ago now. But sort of we wanted to then write a book on that but I lost a bit of faith because I sort of realized I had to rethink our basic theory and I always was disenchanted with our theory that I couldn't really use it to make sense of the developmental aspects.

Apperly: Okay.

Perner: Right? It was okay thinking of other things like implicit/explicit memory, but I thought I am responsible for shedding some light on that.

Apperly: So that really brings me to the sort of soul bearing question, which is whether there are particular things that you think were -- with the benefit of hindsight -- was it wrong headed, things where you really have sort of changed your view quite significantly? I mean, would you say--

Perner: Yes. I don't think really wrong headed, just I realize that my interest wasn't really theory of mind as much but the cognitive processes necessary for that. And theory of mind was always particularly interesting because of the problems that semanticists had in making sense about statements about the mind. And so it's those aspects that fascinated me. I sort of learned that this is sometimes more interesting to philosophers than to psychologists. Psychologists, because they have no affinity to that kind of analysis, so they would need a lot of convincing that they should learn about it. And they are more interested in analyzing in terms of whether -- so it's the concepts that we express in our everyday language whether the children have it or not.

Apperly: So do you think that is a shortcoming in current developmental psychology that it doesn't pay enough attention to those more philosophical issues?

Perner: Well, yes and no. But I mean, I find it interesting, but on the other hand there's something to be said that not everybody finds exactly the same aspect interesting, because then people in totally different approaches discover something that you would never discover if you only hold your way of looking at things, which is sometimes frustrating but--

Apperly: Yes. Yes. Okay. So moving on, could you perhaps say a bit about your experiences with research funding and perhaps how that's changed over the years?

Perner: Well, research funding, my research has been funded in scholarships as a student and I had no real insight in how that worked. And then I experienced the British funding system and I can't see any real difference. But then I moved to Austria and you have to, of course, adjust to -- well, I didn't really adjust, I just applied for my research grants and happened to be fairly successful.

Apperly: Yes. Have you been involved in changing funding policies?

Perner: No. I never had any administrative, sort of administration of science function.

Apperly: Okay. But presumably you've reviewed grant funding proposals--

Perner: Oh, yes.

Apperly: --in the States, funding from the states--

Perner: Yes.

Apperly: --as well as--.

Perner: Right. But I just did whatever they asked me to do--

Apperly: Sure. Sure.

Perner: --to provide an evaluation of the scientific content of the piece and not--

Apperly: Okay. So moving on, so just a bit of biography really. In which institutions have you actually worked in?

Perner: Okay. That is brief. From 1972 to '78 I was a student in Toronto and also worked as a research and teaching assistant on and off, if that counts as work. And then my proper job, my first proper job, I got for one year from '78 to '79 as something like the equivalent of an assistant professor at the University of Basel in psychology. But I then got an offer to become a lecturer at Sussex University, and that was Sussex in the UK. Yes, in Brighton. And that was one of the most active cognitive science departments in the world at the time. And that made it very interesting to me and it also was a job with a more or less permanent thing. I mean that I still have to get tenure but that was foreseeable that one would get tenure. So I went there with Thatcher in '79 and left after Thatcher, end of '94 after sort of going through all the steps in the career ladder from lecturer to reader to professor and then got an offer to go to Salzburg and for mostly personal or irrational reasons decided to move to Salzburg.

Apperly: Okay. Irrational in what sense?

Perner: We were sort of happy in Sussex. Sussex was a good department but then my wife is American, and so we moved from Basel from Switzerland to England because it looked for me a better and more interesting research environment and for her that she could speak her own language and work as a speech therapist, which she was trained as. But we never intended to live there for the rest of our life and it turned into 15 years. The kids were born there. And then this opportunity came up to move to Austria. And in the back of our mind we always thought we would either move to Austria or to the United States where she is from.

Apperly: Okay. Yes.

Perner: But there was no rational sort of professional, and also no good personal reason because we were fairly happy there. Our kids wanted to stay there but still we moved.

Apperly: Okay. So can you say a bit about your experiences as a teacher of child development?

Perner: Yes. I have actually fairly little experience. When I was at Sussex I sort of was responsible for teaching one developmental course and I picked my favorite topic. That is cognitive development in infancy and early childhood and I taught a course on that. And then when I moved to Salzburg Heinz Wimmer is actually responsible for developmental psychology. And I am not notionally responsible for sort of general experimental psychology or cognitive psychology. And so I teach all sorts of courses but not particularly developmental courses, except for every so often I do a course on theory of mind or a seminar on some developmental issues. So I have no great, vast experience in teaching developmental psychology.

Apperly: And what about your role as a trainer of research workers or research students?

Perner: Sorry?

Apperly: So your role is training research students--

Perner: Uh-huh. Okay.

Apperly: --or such workers.

Perner: Yes. I had about, I think, about eight successful and one unsuccessful PhD student in England. And many of them are now fairly well known figures in the field. And I have had about the same number by now in Salzburg and currently several more because the research money increased over the years.

Apperly: Yes. Yes. Yes.

Perner: Yes, and the English system is a fairly unstructured one. PhD students don't have any other task than producing a thesis after three or four years and so I'm used to that system. And in Austria it's about the same.

Apperly: Right. Right. Right. And do you find that there's a tension between the teaching work that you do and the research work you do or is it sort of complementary?

Perner: Well, there's always the usual tension that I like teaching but always find it frustrating because there is never enough time to prepare it in the way that you are really satisfied yourself, because if I did that then I would not get enough research done. And so there's always this conflict. And I think that teaching at least one course and so on is really good, but lots of courses tend to be a problem.

Apperly: So could you say anything about experiences in applied child development research?

Perner: Well, no. I haven't done any applied thing because I always -- I think, also my interest is sort of very abstract, philosophical ideas and so on.

Apperly: Sure. So even when you have done some work with, for example, with clinical groups, for example, children with autism--

Perner: Yes.

Apperly: --in some studies, but you don't view that as applied research?

Perner: No. This is just looking at a theoretical interesting group. I mean, that's the same with development that I'm not particularly interested in children as such but I just thought if we want to know about how the mind works then if you look at different minds then you get information about the mind. And a developing child is a--

Apperly: So in a different world you could just as easily been studying chimpanzees or rats or some other--

Perner: Yes. Okay.

Apperly: --organisms that allowed you to answer your question?

Perner: Yes.

Apperly: Okay. So moving on now to your experiences with SRCD; so when was it that you joined SRCD?

Perner: Yes. I looked up in my CV where I record all those things and it was 1980. And to my surprise it was actually the first society I ever joined, and I think the reason was that I wanted to get child development. But I can't find in my CV when I attended the first biannual meeting but sometime in the later '80s, mid '80s. And then as far as I remember I attended almost every biannual meeting.

Apperly: So were there particular people that you were able to meet going through SRCD meetings? Was it sort of a collection of people doing research and the Piagetian work you were doing originally or the theory of mind work that you did subsequently?

Perner: Yes. I think when I started going to SRCD regularly it was the theory of mind work, because it was sort of hot topic and most of the papers we gave there had to do with theory of mind.

Apperly: Mm-hmm. Okay.

Perner: Yes.

Apperly: And we may have covered this partly already, so you've already said something about your participation in the meetings of the society. And what about publications? I guess, obviously, you joined the society to get *Child Development* if you also published--

Perner: Yes. I have published several papers in *Child Development*. I would have to count how many. I'm still hoping at some time I have a larger thing to submit to the *Monographs* because I think they are quite a nice series.

Apperly: Yes. Yes. Yes. Okay. Have you been involved in SRCD governance?

Perner: No. I have always shied away from doing too much sort of administrative work.

Apperly: Nonetheless do you have any views on changes that could occur within SRCD and the activities that--

Perner: That should occur or did occur?

Apperly: --that should occur, I think.

Perner: Should occur. Well, I have a--

Apperly: Actually sorry. It says the most important changes that have occurred.

Perner: Have occurred.

Apperly: But I think we should also say should occur.

Perner: Should occur. Okay.

Apperly: Yes. Why not?

Perner: Yes. No. I think my experience with SRCD was that when I went the first time it was a much smaller sort of enterprise. There were a couple thousand people, I think. And so the main change in SRCD was that it grew and grew and grew and maybe is almost too large now. And there was always bit of a tension that since I'm interested in sort of very theoretical, cognitive aspects that half of SRCD is not particularly interesting. But it happened so that when I sort of joined it was actually the cognitive part of SRCD that seemed to be on the increase. But lately I think the pendulum has swung back a bit and now there is more -- at least the impression one gets -- more sort of applied stuff again.

Apperly: And do you think there's a particular reason for that?

Perner: No. I think that's just -- if there is an interesting, like theory of mind was a thing that gave a lot of impetus to the cognitive approach and so on. And if you have a new hot topic then it makes the pendulum swing more that way.

Apperly: Sure.

Perner: And right now that doesn't seem to be the case.

Apperly: So do you think it's a change in the priorities for research funding perhaps leading -- I mean, do you think that's leading people to do more applied research? Is it harder to get funding to do--

Perner: This I wouldn't know. Not in Austria. In Austria it was actually changed recently the other way, that there's only one serious funding agency in Austria for this kind of research and, I mean, they're not adverse to applied research but they always put a big emphasis on sort of basic research, fundamental research. It needn't be applied because they realize that this kind of research is really the only dependent on them.

Apperly: Okay. Yes. Okay. Discussing the field that you've worked in more generally so could you say something about the history of the field during the years that you've taken part in it, and I guess the field of conceptual development in general--

Perner: Right.

Apperly: --and theory of mind in particular. So are there particular things that you think have been lost on incontinuities? Were the issues the same now as they were or are there particular issues that have changed dramatically?

Perner: Yes. It changed fairly drastically in some sense because when I joined it was still a lot of Piaget, Piagetian research. And this is really interesting that we're still left with Piaget's findings but nobody sort of works on them anymore. And we still don't have an explanation for cognitive development.

Apperly: So why have they fallen out if--

Perner: Well, because I think nobody had a -- people got a bit disenchanted with Piaget's theory. It didn't really make much sense to many people. And there were attempts to explain it in different ways like language pragmatics. But that only had had sort of local, minor success that they could explain that children can do it a bit earlier but the basic phenomenon still seems to be with us.

Apperly: Sure. So the phenomena have really stood up?

Perner: So the phenomena stood up but since nobody has any good theory people simply don't touch on it again. So maybe I'm just about to go back to the good old class inclusion problem because we have some data linked to theory of mind with alternative naming. And it looks to me there must be a link to class inclusion.

Apperly: So, I mean, do you think there was a sort of step change where people really moved quickly away from Piaget onto different--

Perner: Yes. And so one step change was caused by the infancy research that suddenly with the dissipatration and looking time paradigm suddenly Piaget became totally unpopular because he could show all sort of abilities that wouldn't be possible before the age of six and at the age of one or something or within infancy much earlier, object permanence much earlier than Piaget said and so on. And together with Piaget bashing, which was sort of a common sport, was to find a better way of demonstrating earlier competence.

Apperly: Which was your original motivation in --

Perner: Yes. It was a bit of Piaget bashing that we realized that with this false belief test we had a very clear test that demonstrated a perspective taking ability and it came much earlier than Piaget's three-mountains problem indicated. Right. Yes.

Apperly: Do you now feel a little more sympathy for Piaget?

Perner: Oh, yes. Right.

Apperly: Researchers who are saying they can get infants to--.

Perner: Yes. Yes. Sure. Most enterprise -- also with the older children, aimed at showing it earlier and earlier.

Apperly: Mm-hmm. And so have your views concerning the importance of what you see of the particular focal issues and things that we all ought to be investigating, have your views about that changed over the years?

Perner: Sorry? How views--

Apperly: So the things that you think are most important, are you still interested in the same important questions? The things that you think--

Perner: Yes. I think I'm still interested in sort of the cognitive analysis when we do something. And this has gone a bit out of favor because they're sort of cognitive science has an impasse, at least a traditional one was sort of taken over by connectionism. And that is now sort of petering off a bit. And now it's sort of neuroscience. But again, yes, I always ask my question who lost the cog out of cognitive development?

Apperly: Yes.

Perner: By cog meaning sort of the nitty-gritty, representational analysis.

Apperly: So would you say that was a fear for the sort of median term developments of the field that people are shifting their attention to neuroscience perhaps without having done their homework on the cognition in the first place?

Perner: Yes. There is a bit of that danger, right? And also the modularity movement contributed to this. And there is a close link between modularity and brain imaging.

Apperly: In what way?

Perner: Well, because if you have a module then no person wants to investigate the nitty-grittys of the module. They just say there is a module that does the complicated computation necessary for that domain, right? And since this is complicated and presumably needs a lot of computational capacity it is likely that there is a localizable location in the brain where it takes place.

Apperly: So there's this sort of natural compatibility--

Perner: Compatibility with brain localization. And I think also that served an important purpose, I think, the modularity theory in order to get the brain imaging off the ground, because if you didn't think of modules then you wouldn't really have any hope of finding a localizable process.

Apperly: But do you think that's changed in--

Perner: Now people--

Apperly: --it's made such a prerequisite.

Perner: Yes. Now people talk, now that we know what the brain does in parts that they say, they're more adventurous and say, “Okay, but that need be all done in that place.” And we can look at how different processes interact and so on. So I think people tend to go away from modularity.

Apperly: So how would you like to see the field develop in the next few years? Where do you think it should go?

Perner: Yes. Now that people become aware again of proper cognitive analysis of what goes in a task and what the mental representations have to be for doing it and see how those mental representations are done in the brain. But of course, that's difficult with the current methods.

Apperly: But your feeling is that the neuroscientific approach really gets its interest to you from its ability to integrate with a good cognitive analysis?

Perner: Yes. Right. Yes. And the little brain imaging I am doing, I use it basically as I use the children's age, because the interest in children is to gain information about how our mind is structured by saying, "Okay. If it's structured that way, then children -- certain tasks should be mastered at the same age, right?" And here you have a much richer field to play with, not just the age at which something is done, but the brain region by which various tasks are done.

Apperly: Okay. So I think on the last question then, it's just some personal notes really. So if you could tell us something about your personal interests and your family, I guess, particularly in a way that they've had a bearing on your career.

Perner: Yes. Well, I have been married for almost 30 years, one year missing, I think.

Apperly: Not in the middle?

Perner: No. Next year. And we have two children who are now in their twenties. And, of course, as a good developmental psychologist I tried to sort of observe my children a bit. But I found that extremely difficult and also found out that I couldn't get a decent replication of Piaget's procedures and realized that Piaget could only do that at the scale he did because he had a nanny who took care of the basic needs of the children.

Apperly: So you found it difficult on the practical level--

Perner: Practical level, right.

Apperly: --rather than--.

Perner: Because I was a responsible caretaker and also had to cope with the children's emotional needs.

Apperly: Sure. Sure.

Perner: Yes. But I did make a few casual observations, which I also put into my book. But that's about it.

Apperly: Yes. And do you have any sort of interests outside of psychology that have had an influence on your work?

Perner: No. Except for, I think, my interest in philosophy. No.

Apperly: So that's quite significant.

Perner: Yes.

Apperly: I mean, you've been heavily involved in the European society--

Perner: Yes. Right. Yes.

Apperly: --philosophy and psychology.

Perner: Yes. And, I think, if you count that as outside the field--

Apperly: Yes.

Perner: --then that's difficult, because as I see the field that is part of it.

Apperly: Absolutely.

Perner: **--**sense of cognitive science.

Apperly: Yes. I think that's the full list of questions.

Perner: Okay. Well, thank you.

Apperly: Okay. Thank you very much.