

Janet Wilde Astington

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Major Employment:

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Major Areas of Work:

- Sociocultural: Role of language in the development of social cognition.

SRCD Affiliation:

- Member since 1987

SRCD Oral History Interview

Janet Wilde Astington

Interviewed by Daniela O'Neill
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O'Neill: This is the Society for Research in Child Development Oral History Project and I am interviewing Janet Wilde Astington from the Institute of Child Study at the University of Toronto. My name is Daniela O'Neill and I'm at the University of Waterloo. And Janet and I have been long-time colleagues. The date of this interview is April 29, 2010. So we'll begin. Janet, maybe you can tell us a little bit about your family background.

Astington: I was born and grew up in Britain in the north of England. I was the youngest of three sisters. My father was an architect. My mother was a schoolteacher of young children. And I lived at home until I went away to the University of Leeds in Yorkshire, where I took a degree in botany.

O'Neill: And so with the next question, what early adult experiences were important to your intellectual development, it seems like maybe we'll start with the botany.

Astington: Well, I think that sort of gave me a scientist's kind of view of development, and I, after Leeds, immediately immigrated to Canada and had a year at McMaster University working as a research assistant in the Biology Department, and then moved to Toronto, where I started teaching high school science. And I think both of those were kind of the background which premy research in child development days.

O'Neill: So how did you move from sort of the high school setting to then moving into child development?

Astington: Well, this was back in the late '60s, early '70s when it wasn't unusual when you were having children to take a break for a while and stay home with children, which I did. So I had two daughters, one born in '71 and one born in '73 and that really is, as the question asks, the origins of my interests in child development. I just became very interested in watching them. I mean, I was a botanist, so I wasn't watching them at all with an SRCD eye, but watching them grow and develop. I particularly remember, and I still remember, when they started talking to one another and they also had lots of friends, and I always enjoyed having sort of a group of kids around in the house.

So when they began elementary school and I got involved in the school, I realized I wasn't interested in going back into high school science teaching. And at that time I thought what I wanted to do was to work in elementary schools, and perhaps not in teaching, but in guidance, and counseling, and support in elementary schools. And so for that I thought that I would go to the Institute of Child Study to take their diploma in child assessment and counseling, and for that I needed some social science courses. So I went to the University of Toronto and took a psychology course, and then I took child development as one of these courses, and that really was the start of my interest. And I didn't pursue the idea of carrying on in elementary schools. I went from those courses into a graduate program in developmental psychology.

O'Neill: And so at that time who can you remember? Were there teachers in your courses that were particularly memorable or more than the individuals that you went to work with for your graduate degree?

Astington: At the University of Toronto, where I was doing the undergraduate courses, and I did in the end do an undergraduate degree in psychology, because some of my botany courses counted as credits, so I didn't need to take that many psych courses to get a psychology degree. And Joan Grusec was, I think, the major developmentalist in the department then. I didn't actually take a course with her, but her graduate student taught the child development course that I took.

When I decided to go on into graduate work Bob Lockhart, who was at the University of Toronto, a cognitive psychologist, he encouraged me to think about going to the Ontario Institute for Studies in Education, which at that time was a separate institution. It wasn't part of the University of Toronto, but there was David Olson and Robbie Case, who were developmentalists who were really doing work that couldn't be done in the Psychology Department at the University of Toronto, which was more concerned with animal psychology and memory. And so, although there were some people in the Psychology Department who thought it was a step down to go from the University of Toronto to OISE, Bob Lockhart was very encouraging and that is what I did. And David Olson was my supervisor at OISE and had a tremendously important influence on the development of my career. And Robbie Case, who was there at that time, I took courses with him, and also Carl Bereiter.

O'Neill: And so around what time are we now, what year is this that you were starting?

Astington: So I went to OISE in 1980 and at that time David Olson was working there. There was always an interest that he had and that was developing at that time in children's understanding of mental states and speech acts. We didn't at that time call it theory of mind, but it really was sort of the foundation of theory of mind.

O'Neill: Oh, I'm thinking it's not many years. I mean, Wimmer and Perner 1983, so you're just a couple of years... it's about to explode on the scene?

Astington: And actually, there's an interesting anecdote there, because the year 1983 to '84, which was just as I was planning my thesis, David Olson went on sabbatical to Stanford and to John Flavell's lab. And we were already talking about these things, and David sent me some--it

wasn't email in those days, I think it was actually a letter in the mail--but he had been thinking about there were quite a few studies out then about children's understanding of mental verbs. And there was the Johnson & Wellman --

O'Neill: Johnson and--

Astington: --no, no, Carl Johnson and Henry Wellman--who had been students of John Flavell's and the child's understanding of "know" and "think", the pretest for that was actually, although nobody recognized it at the time, a false belief task. And David wrote to me in this letter and I kept the letter--I still have it somewhere, I should have brought it--said something about, "What if the kid watched somebody move something from one place to another and somebody didn't know and they came in and you asked them where they were going to look for it?" And it so happened that in those days I used to just go and sort of scan the library shelves' new journals and I had just found in *Cognition* 1983, November, the Wimmer and Perner study of false belief. I still am pleased that I just sort of took *Cognition* off the library shelf and found it, and now it's probably the most famous paper in the whole research area.

O'Neill: Yes. Well, it's interesting there, because our careers overlap there, because Wimmer and Perner '83 is the article that I also went to the library on the recommendation of a visiting professor, Robin Campbell, who thought I might like it. So I went off to the library to find that article and that was the start of it for me as well. So we have that article in common as our theory of mind start.

Astington: And I think the other link there was that David Olson was very close to Jerome Bruner, who David had done some either postdoctoral work or visiting work with Jerome Bruner, and so there was a strong connection with Bruner and I think that was really--and David was the sort of academic who frequently organized small workshops and conferences. And so that was how I met Bruner while I was still a graduate student. Other people I think who came at that time, Gordon Wells was also teaching at OISE and so David was well connected to the developmental world, even though we were in an education faculty.

O'Neill: And so when you mention meeting Jerome Bruner and organizing these small conferences was that before the infamous 1986, May, Developing Theories of Mind conference?

Astington: Yes, that was perhaps the most important conference. But my graduate work ended in 1985. David had come back from his sabbatical year with John Flavell and at that time it was all about the appearance-reality distinction and he brought a lot of exciting news about that, and we talked about that. My work was on intention and my PhD thesis was on children's understanding of promising. So there were all these sort of things in the air about seeing and knowing and intending and promising.

And also in those years Alison Gopnik, who had been a doctoral student with Jerry Bruner in Oxford, came to OISE as a postdoctoral fellow with David Olson, so there was David, there was Alison, there was a philosopher in the Philosophy Department at University of Toronto, Lynd Ferguson, who was interested in common sense psychology, who was another colleague of David's. And in 1985, when I graduated David had just become the director of the McLuhan Program in Culture and Technology at University of Toronto and had a Spencer Grant on speech acts and mental states, and I was hired as a research assistant on that. And so quite informally at the McLuhan Program we organized--essentially it was a sort of Monday afternoon, I suppose you could say research group, but really it was just a kind of meeting for tea with the philosopher, Lynd Ferguson, the post doc, Alison Gopnik, me and David Olson. And we started talking about reading the Wimmer and Perner article, sort of reading John Flavell's Appearance-Reality papers. Henry Wellman at that time was doing his work on the child's concept of mind. I had met him in Toronto when he came to APA in the summer of '84 I guess

that was. He was doing that work at that time on children's understanding of the real-mental distinctions. So there were a lot of things in the air, and we talked about all of these, and--

O'Neill: Was Paul Harris part of that early group?

Astington: --not yet, not yet, no. There were just the four of us talking about this stuff, and somebody said, "There's a lot here. We really need to do a literature review." And I thought that we did, but didn't kind of encourage that, because I knew as the research assistant that that task would fall to me. And then somebody, maybe David, who organized so many workshops, or maybe Alison, who also was not keen on doing a literature review, said, "Why don't we have a conference and just invite all these people to come and talk about what they're doing?" and so that was what we decided to do on a really shoestring budget. We got a bit of money from the university and then we wrote and we first wrote to John Flavell, to Josef Perner and to Henry Wellman and asked them if they would come and we were going to pay for those three to come. And then we wrote to everybody else and we kind of said, "You know, we don't have a lot of money, but we have got these three people coming." We didn't even know at that point that they were going to come, but, "You'll really be missing out if you don't come," and that was how that conference came about.

O'Neill: Well, that conference was so unusual, because I remember it so well, because it took place on my birthday. And it was not in the Psychology Department. I had found out about it through a philosopher and medievalist actually, who my father had known. And I got handed a little flyer and it looked really interesting. It was about children, but it was located I think at Victoria College--

Astington: Yes, Victoria, yes--

O'Neill: --right, and it was part of the McLuhan--

Astington: --and they weren't going to charge us for the premises. I think that's why it was there.

O'Neill: --and had none of the traditional sort of what you would have expected to go, and I do remember you and Alison up there, because I remember you both had puppets and you must have been talking either about appearance-reality or representational change.

Astington: No, no, that was the task that we had just done.

O'Neill: So that was the start of the representational change. I also remember not really understanding very much about it, because of course, I had no context in which to place all this new work. But I do remember. It was just, yes, it was a lovely spring day and my birthday, and I was listening to this very cool work with kids, what little of it I could pick up and it seemed very exciting.

Astington: And I think what was so exciting about that time was the recognition really from everyone who was there, that there was really something here that everybody was excited about, and a lot of different pieces came together under this umbrella. And I guess I should say when you say this was the conference, it was called Developing Theories of Mind. But as we were planning I think David's title was something like Children's Understanding of Speech Acts and Mental States," and that's what the conference was going to be. And then at one of these meetings Alison said, "Well, that's not a very sexy title. Who's going to come for that?" And she actually then came up with why don't we call it Developing Theories of Mind and so that then became the title.

And John Flavell--you asked about Paul Harris--John Flavell was himself away on sabbatical this year. It was I guess two years after David had been in Stanford on sabbatical, and John's sabbatical was at the University of Oxford with Paul Harris, and so when we wrote to invite him to come to Toronto for a May conference he said, "Oh, I don't want to cross the Atlantic in May, because I'm coming back to Stanford in July and I'm going to stay in England for the spring. But keep me informed about your plans." So we continued to do that and I guess there must have been something email by then, but a lot of it was--

O'Neill: I remember email in graduate school--

Astington: --maybe there wasn't email then.

O'Neill: and--

Astington: --No, no, maybe it was all--

O'Neill: --I think it was all post still.

Astington: --it was all postal then. So I was updating the program as we developed it and as we heard from people and continued to send that to him. And then in April, just about a month before the conference, he called David from Oxford and said, "I have to come." There were so many of his students and former students who were gathering. In some way I think he recognized that it was going to be an historic event, although we didn't know it then. But he would miss out if he didn't come and he just phoned and said, "I have to come. I'm coming." And I still have in my files in my office when he flew over from Oxford on the transatlantic flight he wrote his paper by hand and he gave it to me to transcribe and I kept the original longhand copy.

O'Neill: Oh, that's great.

Astington: So that was 1986. And that was when I first met a lot of people who were working in this area. I guess I had, the year before in 1985, the Society for Philosophy and Psychology meeting happened to be in Toronto, and that was when I first met Josef Perner, who was presenting at that conference. But Heinz Wimmer and Josef came to the '86 conference and Henry Wellman, and Inge Bretherton, although she didn't contribute to the volume, because she had so much on. She did give a paper at the conference. Michael Chandler--

O'Neill: It was a very unique--

Astington: --who are we not thinking about?

O'Neill: I mean, at that time I had just finished my second year I believe of undergraduate, so I was going into third year and thinking about a thesis, which then obviously eventually I did with Alison and worked with you. And I remember Toronto was just unusual at that time and the number of people actually. There were almost the largest concentration of theory of mind people in Toronto, because when I was thinking about graduate school, there was John Flavell, and well, Alison had moved out to Berkeley by then, and then there was the UK and people who were there, Josef and Heinz Wimmer. But there weren't a lot of other locations really where it was taking place and where there was a number of people.

Astington: And I suppose we should say as we're talking about that conference and the volume that came out of the conference, that Paul Harris had organized a conference in St. John's college in Oxford just a month after ours and his was called Children's Concept of Mind I think, and he had organized that because John Flavell was just finishing his sabbatical year there. So

many or quite a number of the people who presented at our conference also presented the same papers at Paul Harris' conference and then there were additional ones from the British people like Jim Russell and--

O'Neill: I'm thinking Beate Sodian. Was she--she might have--

Astington: She was working with Heinz Wimmer at that time, so that was her connection. Carl Johnson was also on sabbatical in Britain and he went to the Oxford conference and not to the Toronto conference, but does have a chapter in the book. Josef Perner was the person who gave two different papers, one in Toronto on the preschool false belief work and then one in Oxford on the second-order false belief work, and so he has two chapters in the book.

O'Neil: So I guess we've--

Astington: We've gone a long way. We've maybe digressed too far. But that was all from the question "what are the origins of your interest in child development" and that really was where everything was beginning. No, I'll come to that later when we talk about SRCD.

O'Neill: I guess then the next question's asking about whether your ideas have evolved in sort of more straightforward fashion or in a way that you might characterize more as having some twists and turns? And I'd say starting with then your work in theory of mind and where you've--

Astington: I don't think I would characterize it as sharp turns, but maybe also it's not straightforward. I mean, in many ways I think I was very lucky, because my own career was just beginning at this point when this field was opening up, and so really I see my own career trajectory as being sort of part of the development of the field of theory of mind. And so just as that began in a way I think it annoyed many people who were already working in social cognition and areas that are now much more closely connected to theory of mind than they were in the middle '80s when it was sort of seen as a new area in cognitive development. And so I think my own approach was much more strictly as a cognitive developmental person in the '80s and now it's sort of broadened out.

And probably language has always been an important part of it; even in the early '80s when I began my graduate work at OISE I was interested in children's language. But that was not part of the theory of mind field at that time, and I think now it's very much more, so not so much sharp turns as gradually developing and broadening as the field broadened, and probably the biggest change was from taking a theory/theory view of development to moving much more into thinking about the importance of the social/cultural aspects of development. And that came for me in the '90s.

O'Neill: Sort of the link to--

Astington: And that's what brought language--

O'Neill: --and language. Yes, because the next questions are asking about continuities in your work and the strengths and weaknesses of your research and theoretical contributions. And here I think perhaps talking a bit about this link between language and theory of mind, which of course, is captured in your later book on language in theory of mind. But it's been there all along and with David Olson and your work for your thesis and work on promising. Has that been sort of a constant all the way?

Astington: I think the language has been a constant all the way through. I think this question about strengths and weaknesses of research and theoretical contributions and impact and so on, in some ways I feel that my biggest contribution has not perhaps been the individual

research work that I have done, and by individual I don't mean on my own, but the collaborative work, certainly the first study with Alison Gopnik where we looked not just at children's understanding of false belief, but children's memory of their own false beliefs. That was probably the first contribution and Alison and I worked together on that. But she at that time was senior to me and I learned a lot from her in doing that work with her.

But I think in terms of my own contribution a lot of it has been in terms of overview of the field and commentary on the field I think the Harvard Developing Child series book on the *Child's Discovery of the Mind*, which I began thinking about soon after our Developing Theories of Mind conference, because from that conference we decided that the Toronto papers and the Oxford papers could together be put into an edited volume, *Developing Theories of Mind*, which really was the first volume that I think brought this area to broader attention. And there was discussion of who was going to edit this volume since the four of us, David Olson, Lynd Forgyson, Alison Gopnik and I, had organized the conference. And Alison I think maybe now regrets, but at the time thought that she was being very wise in saying, that she didn't want to get involved in editing, because you didn't get much recognition for editing and so she took a pass on that. And I really didn't have much choice, because I was a research assistant, so I was involved, and David had edited a lot of conference volumes, so he was happy to do it. Lynd Forgyson wasn't interested and then, when we got the Oxford papers as well Paul Harris came on board. And I remember David saying, "Well, maybe the order of editorship should be alphabetical," which would have put me first, but I didn't like that it was alphabetical, so I said, "Well, really I think we should wait and see and it should be determined by how much work people do." And so it did work out as alphabetical, because David and Paul decided that I had done the most work on the volume. And that was really, I think doing that editing for me was a tremendously important experience, because there was so much back and forth with all of these people who were kind of stellar researchers, back and forth with them, and also then with one another so that it was much more than just a kind of collection of papers. And I learned so much from that, from working through those papers.

The other thing maybe I should mention is that I didn't realize then, but it was highly unusual that everybody was so keen to get their papers in this volume and they just sent them in and they arrived early and the volume went to press on time. Since then I've realized people take years to get papers to you, but not then. They all arrived and so that was formative and I really used that experience and all that I'd learned there to do the Harvard Developing Child book on the *Child's Discovery of the Mind*, but I was rather slow in doing that so that I was lucky in a way, because so much more had developed by the early '90s when I was writing that. But that was an overview that amazes me that 20 years later you could still get it and so--

O'Neill: Oh yes. No, I regularly give it to students and it's just lovely overview.

Astington: And it now I think has six translations.

O'Neill: Yes, and am I right, that the photograph on that is not just any photograph?

Astington: Oh yes, the photograph is my younger daughter, who inspired this interest in child development. In fact, and another aside, which maybe isn't of such interest, but when she was at Dalhousie University and Chris Moore was using it as a text in his course she said it was kind of--she was doing history, but she said she saw people walking around campus holding the book with her photo on the front.

O'Neill: Well, I think it's true what you say about one of your strengths being able to take these overviews and these bigger pictures, because you are certainly a very, as a discussant and especially at SRCD, I've always thought you give some of the best discussant talks, because you always do what a discussant is actually supposed to do; you take all of

the papers and actually produce new thoughts and ideas that bring them all together, whereas sometimes discussants will just end up being a fifth talk on their own work.

Astington: Well, thank you.

O'Neill: Your discussants are never like that.

Astington: And I think I sort of moved into the discussant role later, because I don't know if we're getting--there is a section on SRCD, but we can talk about it now, because for a number of SRCD meetings after the '86 conference I put together a symposium that was really a theory of mind symposium, and I felt that that was another kind of bringing things together. And I suppose it was the SRCD meeting in '87 was when Alison had organized a symposium, which was using some of what we'd done at the conference, but then the '89 meeting was really when theory of mind was starting to hit the press. And that was when we did the symposium on developing theories of mind, what develops and how do we go about explaining it, and that was--

O'Neill: Yes, that's where I remember the crowds being huge. But we can get to that later.

Astington: Yes, yes. So we're talking about strengths and weaknesses and contributions and so on.

O'Neill: And do you have your favorite studies that you've published? I mean, they sort of ask about best representing your thinking. But it seems to me that a more fun way to ask that is just your favorite piece and I know sometimes people talk about something that is a favorite of theirs, but it actually doesn't get cited very often even though you feel maybe it should or it holds some importance.

Astington: I mean, in some ways I think the Developing Child book, *The Child's Discovery of the Mind*, isn't really an academic book. I mean, it's intended for teachers, parents, policy makers, a more general audience. But in many ways I think it's been a very useful book, because it has been used by students as well as a sort of introduction to the field. And so I feel that really is a good representation of what I do.

And then maybe more than journal articles, the chapter contributions which I've maybe spent more time on than is traditional in our field, because I've never been in a psychology department so I've never had that empirical article publishing pressure, although I've done some of that, I've put more work, I think, into the chapter contributions, which have been sort of broader discussions and debates about the theory behind children's theory of mind. And I think--

O'Neill: It's interesting that you bring that up, because I think that tension still exists to date. That just the other day someone was talking to me about you just don't get any credit for writing book chapters when it comes to things like merit reviews. Yet, I know that some of the book chapters I've written or perhaps some of the ones that I get the most feedback about and I feel like it's because you're a little bit freer. You can maybe go out on a limb, you can maybe make connections, and you're kind of working through your own thinking, and it may not be completely laid out and not everything is answered, but you can also kind of leave questions open.

Astington: Yes, I think I've always enjoyed that--

O'Neill: --it might be interesting to say--

Astington: --more and probably invested more in it. And I guess the meeting that Peter Carruthers organized at the University of Sheffield when I did--that was on theories of theory of mind, and that was when I did the chapter on the Vygotskian views, that that was really when the language, culture, social part of theory of mind--when I really started to pay attention and think about that. But I guess we should maybe go back in time a little bit. We were talking about the late '80s and the development of the field. At the SRCD meeting in 1987 I met Chris Moore, and at that time he and Doug Frye had just got money for an SRCD workshop, which they organized at Yale in 1988. And they were a bit upset that our conference and our book had pulled the rug out from under what they were planning, which really was another coming together of people who all had these same interests.

That was where I first met Judy Dunn, and so they really did bring together the more social and more cognitive aspects and I can remember some really fascinating discussions between say Josef Perner and David Premack was there, and Judy Dunn, and Dale Haye and it really was the sort of two sides of theory of mind, which now I think completely come together, but at that time were quite separate.

O'Neill: It's true. Yes, it took a while for it to branch beyond just false belief, and representational change, and appearance reality, and for the work on infants hadn't really started yet. And it was just still really more, I guess in a sense, about two-year-olds and toddlers with none of the infant side yet even on board yet.

Astington: You know, there was all the work on false belief, and there was the work on children's understanding of their own false beliefs, which I did with Alison Gopnik. But my own interest had always been in intention, growing out of the work on promising that I did for my thesis, and the question about what contributions are the most wrong headed, when I saw that I thought, Really I think it was all I tried to do with intention, and I don't know that it was wrong headed, but I do remember being so impressed by the Wimmer and Perner '83 and the sort of clarity with which that described children's understanding of belief and the sort of importance and everything that came out of that.

And for a while--and this is in my naïve younger days--my ambition was to do for intention what they had done for belief. And I was trying to come up with the false belief task for intention and what I realize now was that that was actually wrong headed, because intention doesn't work in the same way as belief. And I think the rich view that we now have of intention, which sort of is really in many ways the more important mental state than belief in all the work on theory of mind with the start of the very early understanding that infants have of people's goals going right through to the deviant causal chains that even nine year olds have trouble with. So I think, again, thinking about overview chapters and bringing things together, the chapter from--I guess it was the conference that Lou Moses, and Dare Baldwin, and Bertram Malle organized at the University of Oregon--

O'Neill: In the early '90s?

Astington: --yes, they did have a couple of conferences, but the volume which they put together on intentions and intentionality and the chapter that I wrote for that on--I can't remember what it's called, but it really is an overview of intention all the way from infancy into the school years. And I guess it's called the "Paradox of Intention," because it's sort of the mental state which children understand right from the beginning and yet they don't fully understand it until right at the end. It goes right through childhood. So that, I really have, I think, thought more about intention than anything, but still haven't come up with a false belief task for intention. We're a bit all over the place in our protocol, aren't we?

O'Neill: Well, our next question sort of focuses on research funding. And I mean, I think here in Canada we have sort of quite a simple system of Natural Sciences and Engineering

Research Council, and then Social Sciences and Humanities Research Council, and then what used to be the Medical Research Council at that time, now the Canadian Institutes of Health Research, and I mean, for a lot of us working in theory of mind we're always between the two NSERC (Natural Sciences and Engineering Research Council) and SSHRC (Social Sciences and Humanities Research Council) the Natural Science and the Social Science and that certainly is reflected in your work as well, being funded by both of those.

Astington: Yes, and I think as well as there being those two councils, they may be less so [different] now, but certainly more strongly so when I was first looking for research funding in the late '80s, NSERC gave fairly small grants, which were designed to support a research program, to support a researcher. So you did put in, obviously, a proposal, but it was not so much for a project as for a research direction. And it was a small amount of support, which for the kind of work that I did, was sufficient and it was a continuous support, so that originally the grants were every three years, and at the end of three years you applied for a new grant and the new grant proposal incorporated the report on the previous three years. So it wasn't that it had been a project that you had had to do a project report; you essentially reported what you'd been doing for three years. Obviously some of that related to what you proposed, but it could go off in different directions and so long as you had been active it didn't matter if it hadn't done everything that was in the first proposal. And then that was another three years of funding and they then extended it so that it was every four years and now it's every five years. And so since 1980s--I first applied in '87, so since '88 I've had continuous support from NSERC to the level that it has provided some money for students, money for travel, money for materials. In our area, the materials that you have to buy are inexpensive.

O'Neill: Luckily, quite cheap.

Astington: And so that's really been my main funding support. SSHRC, which is more project focused, I did have a SSHRC grant looking at the relationship between theory of mind and school success and then I've had some small grants from Spencer, which has also been more related to the educational aspects of the work.

O'Neill: Well, the thing I've found over the years even in my own work is one never fell squarely into one camp or the other, so I remember as a post doc being told to just apply to all three grants and have them sort it out, all three agencies, which wasn't too much fun to have to prepare three applications. But especially as the field has come to merge more the social side and the cognitive side even in many areas, not just theory of mind, but in language if you're looking at gestures or pragmatics, you're kind of caught between these councils and having to divide some of your work one way or the other.

Astington: Yes. Well, I seem to remember that although my main interest was in language and cognition because the money was coming from NSERC I sort of played up the cognitive part of it and played down the language part of it even though how can you separate those?

O'Neill: Yes, exactly.

Astington: But I think unlike the U.S. it isn't having to go after large grants to support a sort of research enterprise. And I sort of mentioned in passing when I was talking about writing that I've never had a position in a psychology department and so my first position was at the Institute of Child Study, which was part of the Faculty of Education at the University of Toronto, and although I don't think that my research is education research it does have different parameters than in a psychology department.

O'Neill: So turning to consider where you've held appointments, the Institute of Child Study at the University of Toronto is quite a unique place having a school attached to it. And maybe saying a little bit more about that and that it has quite a long history--

Astington: Yes. Well, my first appointment after the two years working on the Spencer Grant with David Olson in the McLuhan Program I then had a research fellowship, which gave me a position at the Ontario Institute for Studies in Education for three years, and that was just as the theory of mind field was getting going and that was where I did my work with Alison and the early work on intention.

And then my first academic appointment was at the Institute of Child Study, University of Toronto. It's part of the Faculty of Education at the University of Toronto. And the Institute of Child Study is the oldest institute at the University of Toronto and is one of the--I think there were ten institutes of child studies which were funded by the Rockefeller Foundation in 1925. They're not all still going now I don't think. But there's Yale, there's Minnesota, there's Berkeley, there was Toronto. I don't remember all of them. Toronto is the only one which has--oh, and Stanford has an institute, or maybe Berkeley was the Rockefeller Institute. The others all have preschools associated with them, so generally nursery and kindergarten sort of three to five, six years.

The one in Toronto has a lab school associated with it, which is nursery to the end of grade six, so three to twelve year olds, and that really was a tremendously interesting and important connection and a place to work so that within the Institute there was the adult student program, the children and the lab school, and the researchers who were all working together in the same place.

O'Neill: And who were the directors at the times you were there?

Astington: Well, when I was hired in 1990 Carl Corter had just come from the Psychology Department as a new director to really build it up and build up the research capacity there. Michael Fullan was the dean of the Faculty of Education. And Carl Corter was building up the Institute of Child Study. I was hired in 1990 and then Jenny Jenkins came in '91. She was a clinical psychologist from Britain, and at that time the Institute had both a clinical diploma program and an education diploma program, and so she and I had offices next door to one another and really some of the most important work I've done I think came out of just somewhat casual conversations with Jenny.

She had a daughter who was just sort of at the age where my research was focused, and so she would report all sorts of fascinating things about what her daughter was doing. And Jenny, as a clinical psychologist, was much more interested in the implications of the cognitive work that I was doing, and so we decided that we would put a study together. I don't even think we had any funding for it. It was just something that we were sort of doing alongside the work that we were really doing where what we wanted to look at was children's theory of mind in relation to their real world social lives. And sort of a naive idea when we were planning this was that we would use the children in the lab school, the children in the nursery classes and kindergarten classes in the lab school, that we would spend some time in there just watching them, and then we would try to match children for age and language and look at those who passed and those who failed false belief tasks to see if we could see differences in their real world social behaviors.

And those were the studies that were reported first of all in the Jenkins and Astington '96 *Developmental Psych* paper, and I think the most important finding from that was that we realized that we couldn't match them on language if they were passing and failing false belief tasks, because there was such a strong correlation between language and false belief tasks--and that's really what began the empirical work that I did on language in theory of mind. And then that led into the longitudinal study where we looked at which was promoting which in development, and showing that it was really earlier language that was developing false belief understanding.

O'Neill: Well, I think it's definitely a sign of how hard it is to do that work that your work with Jenny is still very much at the forefront of the work that exists, and there's not a huge amount of it, finding links between theory of mind and real world behavior. One area that I think, you know, maybe there's more in the world of autism sort of links between the theory of mind abilities and then conversational behaviors or--

Astington: On your work, yes.

O'Neill: --and my work. But I think yet it's just incredibly challenging work to do, because once you're out in the real world you realize--I don't know if you've had the same sense--that it's just so much more complicated than you thought.

Astington: Yes.

O'Neill: And that a straightforward false belief task in the lab, exactly how that's going to manifest itself in a child's pretend play is not that obvious.

Astington: And I think as you talk about real world that also relates to thinking about what goes on in schools and my interest in theory of mind in school, because in the kindergarten classroom you do have a whole range of potential in terms of the level of children's false belief understanding. So then you can really look at how that plays out in terms of children's behaviors in the classroom.

O'Neill: Yes, I think now it's more standard to do more batteries, because we know more about these earlier theory of mind abilities, and people have come up with more tasks to tap them and so forth.

Astington: Yes.

O'Neill: But that probably gets us closer to that.

Astington: Yes, and I think just thinking about the work that I've been doing and what's influenced it, that after those years that was sort of in the early '90s at the Institute of Child Study and working and talking with Jenny, I then had a sabbatical year in '97, '98 where I went to the Institute of Psychiatry to Judy Dunn's unit and that's where I met Judy Dunn and Claire Hughes and began a continuing connection with Claire. And I think that really--you were saying about giving batteries--that really sort of broadened my perspective of theory of mind and, not a narrow focus on false belief, but looking at children's understanding and at its real world implications and just the tremendously rich transcript data that Judy has that Jenny and I had far less of looking at pretend play. But it was really inspired by Judy.

O'Neill: Yes. No, I would say Judy's work is inspiring. If transcript data is what you like, then Judy's a wonderful inspiration, her work.

Astington: And again, I think thinking about chapters and sort of overviews it was the conference in Australia at Macquarie University that Betty Repacholi and Virginia Slaughter organized where what I wrote for that was the Necessary but not Sufficient False Belief Understanding and Social Competence ["Sometimes necessary, never sufficient: False-belief understanding and social competence"], and that was looking at the work I'd done with Jenny and the work on schooling that was done with Jan Pelletier, but also an overview of Judy Dunn's and Claire Hughes's work and so I think that really has made a huge contribution to that area.

O'Neill: Now it's a smaller study, but it's one I like a lot, is your work on the storybooks--

Astington: With Joan Peskin--

O'Neill: --with Joan Peskin--

Astington: --yes.

O'Neill: --as well on the implicit and explicit mental states. And I think there's something very intriguing about that work.

Astington: And that's where--

O'Neill: On the narrative side, I mean, I often think of you as someone who shares with me an interest in narratives and storytelling and it hasn't really come into the conversation so much yet.

Astington: And I think that also shows where you go in expecting to find something, and what you find is completely different and so it makes you rethink. I don't call that study wrong headed, but what we showed--I was interested in children's understanding of mental verbs and thinking if we really surrounded them with this language that they would pick it up and it would change their understanding of beliefs, whereas we found it was the children who hadn't had the explicit language but who had had these concepts implicit in the stories who actually did better on the post tests.

O'Neill: And I think there's just something wonderful about that, being someone who loves picture books thinking that the child's own active contribution to trying to figure out this story and--

Astington: Well, Joan Peskin claims that from that study it's completely changed her own teaching and now she's kind of not didactic in lecturing and her teaching, because she realizes that you have to create it for yourself.

O'Neill: Yes. Absolutely. Just take a moment and skip over talking about teaching, because the next question is really about applied child development research. And I think that you have probably some really interesting things to say here just because you haven't been in a psychology department, that you've been director of a department that has applied right in its name, the Department of Human Development and Applied Psychology, and also just there's often not always a lot of cross talk between departments or institutes of education and psychology departments. And U of T has both of these and lots of other institutions, but there's not always a lot of cross talk, and maybe first just, since this section is more about institutional, maybe talking a little bit about just from that level, but then also maybe we can talk then more about just doing applied research and that side of it.

Astington: Yes, yes. I think in some ways OISE and the Institute of Child Study, although OISE now is the Faculty of Education at University of Toronto, when I was there as a student it was outside the University, and then in '96 it became part of the University and the Institute of Child Study where I was then became part of the Department of Human Development and Applied Psychology. I think in some ways it's perhaps a bit unusual as a faculty of education in that it does have a fairly broad mandate and sees education very broadly so that it's not just about schools and schooling. And I have struggled, I think, throughout my career to try and think through what are the implications of what I'm doing, how can it make a contribution to schooling, and have gradually recognized that looking at basic issues in development is a contribution to schooling, that we need to know about these processes, and that that can make a direct link.

And I think most recently, and this is what I'm most interested in now, is the recognition that maybe we're not going to take the work in theory of mind and directly translate it into kindergarten curricula. But what I have found has been tremendously important in recent years is that at the Institute of Child Study we have a two year master's program in child study and education. And the students in that program are spending two years getting a master's degree and a teacher's certification. And I teach the first years in that course, and essentially I do a mini course on theory of mind quickly through the preschool years, and then sort of thinking about the school years. And really what it's doing is getting teachers to think about children in a different way so that it's not directly what can we provide children, but what can we provide teachers and so that they think about children and children's minds in a different way.

O'Neill: I was going to see if that's where you were going. I think in terms of, there are lots of different ways to view children and for teachers to view children, but if what you're really getting at there is just how rich their mental lives are, and how much they know, and how much they don't know in some ways that are surprising.

Astington: And especially I think directly the theory of mind concepts like recognizing that in kindergarten children may not know that people know things that they don't know, and they know things that other people don't know, and realizing that gradually in the kindergarten years, coming to recognize that people have their own mental lives that are separate and private, recognizing that people may not want what they want, or like what they like, or know what they know, and then in the school age years thinking about recursive beliefs and being able to think about what somebody else thinks about what you're doing or wanting or saying.

And we've also spent quite some time thinking about the sort of Chandler concepts of interpretive diversity, and recognizing that even if you present a group of children with the same materials they're not all going to interpret it in the same way, and then the children themselves recognizing that everybody reading the same story isn't going to get the same thing out of it.

O'Neill: There's probably still a wealth of work that could be done on just how these mental aspects of children's lives play into more school topics.

Astington: Yes, and I think what I've done for the last three or four years, which really should be a book, and I sort of keep thinking I should do this into a book is that I have this sort of mini course on theory of mind. It's only a module within the first year course, and they do, in five weeks, learn a lot about theory of mind development, and then we have a poster fair in the final session where the students' assignment is to use the theory of mind research to design a lesson or a project or an intervention that will use theory of mind in the classroom. And the sort of wealth of different things that the students have come up with is just brilliant in terms of perspective taking in stories, in terms of programs to help to ameliorate the effects of bullying, social competence in kindergarten, it's just--

O'Neill: I know that there are lots of links say between math and language--

Astington: --yes.

O'Neill: --and language ability and how those all play into these different perspectives that you're often called on to take.

Astington: Yes, I mean, what's been so terrific for me is the things that the students have come up with, which I wouldn't have thought of, but where they really have seen the usefulness of this work in the classroom and that's directly what they're doing. They're applying it, so these really are applications.

O'Neill: It definitely sounds like potentially a book. That would be really interesting. We talked a little bit about doing applied work, and sometimes it's seen as the easier work to do. I think it's exactly the opposite; it's the much, much harder work to do. And also because you're working outside of your institution often you're either having to work with community organizations, or schools, or school boards, or there's a lot of other people and institutions involved. And has that come into your research as well?

Astington: I myself haven't done so much of that. I mean, I do see it with my colleagues at the Institute of Child Study, but I think my direct influence has been working with students rather than working in schools. I mean, I have conducted research in schools, but it's been more focused on working with individual children, not working at the classroom level.

O'Neill: I guess it's unique at the Institute--

Astington: And has its own laboratory school; yes, yes, yes.

O'Neill: --a little bit easier to do. So just jump back then to talking a little bit about your experiences as a teacher. And I definitely have really good memories of being in your class as an undergraduate student. In fact, one of the things that I remember the best is your absolutely phenomenal memory for the articles, the names of the authors, the dates, the details of studies, which I always had to write them all down in my notebooks and you always seemed to have them right at the top of your head.

Astington: Well, I think it was easier when you were a student, because there wasn't so much to remember then.

O'Neill: Maybe that's true.

Astington: And we should maybe say that I think you came--I said that I had three years at OISE as a Canada Research Fellow [SSHRC], and that was when I first taught a course on theory of mind in 1987.

O'Neill: And that would have been the one I was in.

Astington: And that was the course that you came to as an undergraduate student. It was the first time that I had taught the course on theory of mind. And I remember the reading list then was virtually everything that existed in the area--

O'Neill: That's true.

Astington: --which was why it was easy to remember, because a lot of it was from the *Developing Theories of Mind* volume, which was still in development at that time. I mean, we had got all the chapters in, but it wasn't published until '88, so we were using them in the course in '87 and I've continued to teach that course ever since. But now when you come to decide what you're going to do for the 12 weeks there's hundreds of papers to choose from and then there was just enough for a 12 week course.

O'Neill: And I guess I was not just a student, because then I worked as a research assistant with you on some of the sources work where we were going to daycares all over Toronto and looking at that. And another memory I have that is SRCD related for those who think it was always PowerPoint it wasn't. I remember being on the floor where we always had to choose a color of background of construction paper onto which to paste, and so everyone madly before flights in the last hours we were gluing down pages onto colored construction paper and it was quite a few--

Astington: --posters, yes.

O'Neill: --more years before PowerPoint would come in.

Astington: But I think, thinking about that time at OISE, one of things I'm supposed to say in terms of teaching is that the Institute of Child Study and the Department of Human Development and Applied Psychology at OISE, these are graduate departments, so that I haven't been involved in teaching child development to undergraduates, so generally working with more senior students in smaller classes. And a lot of the work has then been working with graduate students on their own research and that's really been maybe sort of more of the teaching contribution than the classroom teaching. In my early years at OISE and then at the Institute of Child Study, which didn't have its own graduate program, I was cross appointed to Applied Psychology at OISE and to Psychology at U of T, and that was how I came to work with graduate students. And a lot of my early work was working on graduate students' committees with David Olson, who was supervising, so the work like Penny Vinden was doing with her cross cultural work, and Ted Ruffman was a student of David Olson's and I was involved in his thesis work. Quite a number of students at that time who then went on into their own careers in the area.

O'Neill: Yes, I remember that as being very fun. There was quite a big group of us and just a lot of laughing too.

Astington: And then more recently my own students, and I think in this decade a lot of my work has been the work which I've been doing with students so that Eva Fulippova's work on irony, Mary Thelander, Julie Comay, and Karen Milligan, who wasn't one of my supervisees, but as a graduate student project she came to work with me and I was at that time wanting to do a literature review on language and theory of mind. It was just at the time that that was becoming a big focus of my work. And she persuaded me that if we were doing a literature review we should do a meta-analysis, and that was the 2007 paper, which was the meta-analysis of over 100 studies of language in theory of mind. So it really is in that work with students that has sort of kept me honest in terms of doing empirical work and given me the time to think about the sort of broader chapter contributions.

O'Neill: So turning now to SRCD in particular, from your vita the first time it appears is 1987 with a talk with Alison and a number of other co-authors on representational change. And my first experience at SRCD was 1989 and we can get to that next. By then the crowds were pretty big for the theory of mind talks. What was that like in 1987?

Astington: Well, I guess I should say just before we talk about 1987, 1987 was the first SRCD meeting that I went to, and I still remember it very clearly and I've been to every SRCD meeting since. But curiously, the meeting before that in 1985 was in Toronto, and at that time I was just unaware of SRCD, because I was in a faculty of education and David Olson was my supervisor and mentor, and our department I think would go to AERA, to the American Education and Research Association, and I had been to that meeting. I had been to that meeting the previous year [1984], which was in New Orleans I think. And SRCD was in Toronto, and I was unaware of it, which is kind of strange, because Joan Grusec and Alison Gopnik were part of the organizing committee. But I didn't know that it was happening. Jerry Bruner came to the meeting and I remember meeting with him and David and having a discussion with them, but being unaware of the conference going on in Toronto. So subsequently I feel so regretful that there was SRCD in Toronto and I didn't know it was happening and didn't go.

O'Neill: Now of course, the meetings are really quite big now.

Astington: Yes.

O'Neill: What was your memory of what it was like?

Astington: In 1987--I mean, '85 I wasn't there. '87 in Baltimore, it was a fairly small meeting. And I think my strongest impression was that I--it was sort of early days for me to be going to conferences, but I remember the poster sessions, and I particularly remember John Flavell's poster. Now I had met him in '86, because he had come to the developing theories of mind conference, but that was the only time I met him. He was this great, important scholar and who I was somewhat awed by, and I went to look at his poster and he greeted me like an old friend. And I had the same experience with so many people who I knew I guess through the connections with David and through the conference that it really was a very collegial group. And that was the conference when I met Chris Moore and that was when he was talking about getting the SRCF study money for the conference that was at Yale the following year.

O'Neill: Well, the poster sessions are always sort of where you meet everybody, but it's getting harder and harder. I mean, you used to be able to be pretty much assured that if you went when there were a number of theory of mind posters that you were going to pretty much see everybody.

Astington: And it wasn't. No, I mean, it was just--

O'Neill: Now it's much harder.

Astington: --in those days going to SRCF I didn't do a calendar ahead of time of arranging who to meet. But you just met people.

O'Neill: Yes, I know you could kind of look on the plane and just figure it out haphazardly. Now it's a much more strategic operation to go and figure out how you're going to meet everybody.

Astington: But that was 1987, and as you say, Alison Gopnik had organized this symposium on theory of mind and she presented the paper that was the four of us who had had this research group in Toronto. But that was just one symposium in the whole program.

O'Neill: So do you remember a bit about when you were talking about the work or the audience, how it was received or maybe questions, not particular questions, but just a sense of was it--

Astington: I mean, people were interested and I think John Flavell was talking about appearance-reality and Henry Wellman was talking about--I don't remember if he was still doing--I guess he was doing the belief desire psychology stuff then, and maybe either Carl Johnson or Paul Harris or Johnson/Harris together were. But it was a symposium in cognitive development, people were interested, but it wasn't big news in any way.

O'Neill: Now at that first meeting do you remember did you all get together? Was it more of then really about this smaller group of you that had presented--

Astington: I think the people who--

O'Neill: --knew each other--

Astington: --the people who'd been in--

O'Neill: --through the earlier conferences?

Astington: --the people who'd been in the Toronto meeting met one another, but Josef Perner wasn't at the '87 meeting. I remember Heinz Wimmer being there, so it didn't seem like a theory of mind group then. I think the 1989 meeting--

O'Neill: --I was just going to say--

Astington: --in Kansas, yes--

O'Neill: --we should jump to Kansas--

Astington: --yes, yes.

O'Neill: --that certainly was my first SRCD and that sticks in my mind very much, that people now knew there was this--

Astington: And I think what was surprising about--that was suddenly there were all these symposia and all this excitement and interest in theory of mind and that symposium, as I said, that I'd organized on developing theories of mind, what develops and how do we go about explaining it, I had been interested to organize that, but was a bit intimidated when I saw that they'd given us one of those huge rooms for it and then discovered that it was full.

O'Neill: It was totally full. No, exactly.

Astington: And by that time the book was out. The book came out in '88, so that got people's interest. And my other anecdote about the book when I was saying about who was going to edit the book and Alison I think now regretting that she made the wise decision not to be involved, about that time, sort of '89, '90 David Olson, who had been my supervisor, then I had been his research assistant and then I was doing my own research, but we were by then colleagues, went to a conference in Sweden and he was quite pleased to report to me that one of the Swedish students had come up to him and said, "I know who you are. You have a chapter in the Astington book."

O'Neill: Well, I definitely remember as still an undergraduate just about to head to graduate school, just feeling very privileged to be able to tag along to dinners and just hear you, and Alison, and Josef, and Henry and it could go on for hours and hours on just the new findings that everybody had, and what to try next, and ideas.

Astington: And the other part about that, which didn't strike me as unusual, because I had no prior experience, but what other people who had been longer established in the field said to me was what a collegial group it was.

O'Neill: Yes, absolutely.

Astington: I mean, everybody was so pleased to see one another again, and there was so much to share, and although obviously everybody was excited about their own developments, it was never really hostile and competitive.

O'Neill: No. I mean, boosters and scoffers maybe, but that was pretty tame. No, I definitely, even today it's still a collegial group, a much, much larger group.

Astington: And then going on from Kansas City in '89 when there were a number of symposia I remember Robbie Case, who by then was a colleague of mine at the Institute of Child Study, he had come back from Stanford to Toronto, saying, "Well, it's like emotion. Emotion was big in the '80s, and then it came and went," and I think his idea was theory of mind had had its day in 1989 and then we were going to see it gradually decline through the '90s. So I think he was

somewhat surprised when it continued to grow in '91, the meeting in Seattle, there were even more symposia on theory of mind.

O'Neill: I don't believe you've been involved in the governance if I'm right?

Astington: No, No. I think my contribution was with *Cognitive Development* [journal].

O'Neill: Yes, as an editor, I guess again, you're getting a broad overview.

Astington: I mean, again, I guess it was SRCD, and this was now '95 in Indianapolis when I had dinner or a meeting or some discussion with Katherine Nelson, who was then editor of *Cognitive Development*, who somehow persuaded me that I was interested in taking this on. So there was a transition I guess later in '95, because by '96 I had become editor and edited the journal for the next four years, although it was a rather turbulent time in its history, because of the publishing aspect of it. But that aside, just for me what was tremendously interesting and important was getting a broader view of cognitive development really through editing. I mean, I thought, I don't know how many previous editors of *Cognitive Development* have edited this journal with a knowledge of cognitive development as really theory of mind. I mean, because that was where my graduate work had led, and in some ways it was very broad, but in other ways it was very narrow. And so I thought, I've never taught a course in cognitive development. Have I taken a course in cognitive development? But this really was my education in cognitive development and I did learn a lot, both about the field, but also about the publishing process, and about reviewers, and about authors. And so that I feel was my contribution to the field in not a governance way, but in a supportive kind of way.

O'Neill: Now one of our questions is what do you believe are the most important changes to occur. I think one thing that's obvious to everyone is just how big it's gotten.

Astington: No, I think that really is the most striking change. And in some ways when asked about the changes and the changes in activities, I think it has changed it, because nobody now can take in all of it.

O'Neill: It's almost overwhelming.

Astington: And so I think for me and for many people it's smaller groups and smaller meetings, which are more focused where there's more of the interchange of intellectual activity now in conferences, whereas for SRCD it's a bit like a magazine overview of where's the field gone in two years.

O'Neill: And I guess it's moved from back Kansas, and I don't know when the first shift was to more of a convention center, because now we're just in the big convention centers.

Astington: Yes, and I think it has to be because of the number.

O'Neill: It has to be. But I've found the physical space often can make a difference, so at the last meeting where the poster session entrances and exits at both ends it was much, much harder to find people, because they could just go in one end and out the other and you didn't have that one place where people were coming in and out and you might bump into somebody. Now you could be in a long train and never see, so--

Astington: No, and I think that that size of conference is what is such a striking contrast to the Developing Theories of Mind conference in '86, and then in the later '90s we had the Developing Theories of Intention conference that was, again, in Toronto with Phil Zelazo, who we've not mentioned yet, who was an important Toronto colleague, and Lynd Ferguson, who was important in organizing that conference, and David Olson. And then in 2000 I organized

another small conference in Toronto for David's retirement, the Minds in the Making conference, which again brought together a number of people who'd worked with him and worked in this area. And then the conference we organized in 2002 on Why Language Matters for Theory of Mind, and I saw that as being a follow on to Developing Theories of Mind where we got back to some of the questions that we hadn't really got into in '86.

O'Neill: Yes, that was another wonderful conference.

Astington: And so I think those small meetings are tremendously important for everyone in terms of the exchanges that you can have, and everybody goes to all the papers.

O'Neill: I think, yes, those smaller meetings you maybe get into more in depth discussions or a chance to meet with people more. SRCD certainly has an energy about it and certainly if a young undergraduate student or a new graduate student is going you know now that they're just going to come away with this incredible--

Astington: And the opportunity to meet a lot of people--

O'Neill: --and amazing--and see how big the field is and it's a bit different that way than when it was small.

Astington: --and I think there were quite a number of small conferences that then people who couldn't get together at SRCD, so there was the one I mentioned that Chris Moore and Doug Frye did that became the *Children's Theories of Mind* book and then there was the one that Andy Whiten organized in St Andrews in '89, which was his Mindreading. But that brought together, again, so there were a number of small conferences that really got the field going I think in the late '80s, early '90s.

O'Neill: So we've almost come to the end here thinking about the field. Well, we've talked a lot about the field of theory of mind certainly, and I don't know if you have anything more to comment on, other events and issues that have come up over the years?

Astington: Well, I think what's interesting now is that it isn't something which as Robbie had anticipated has kind of grown and died away, but has really broadened and now is much more than a topic in cognitive development. I think maybe the most exciting and interesting areas are the broadening development span so that all the work in infancy and the work looking not just at infants' understanding of goals, but infants' understanding of beliefs is bringing us to rethink the whole role of language in theory of mind. I think that's an interesting area and it's sort of leading us to think about more intuitive theories of mind being brought into more reflective theories of mind through language, but it's made it a much broader area, and then going on into the school years and thinking about further developments in the school years.

O'Neill: And it also seems firmly implanted in the field of autism with a lot of explanatory power there in terms of the difficulties faced by individuals in trying to bring together what the nature of some of those difficulties are. And yes, so the last question is one about your personal interests, and your family. And actually you've already talked a little bit about your children and how they spurred on your research.

Astington: Yes, well, I guess it was really--sorry--

O'Neill: No, I was just going to say now, of course, you have grandchildren as well, and I'm wondering--it's different watching these developments as a parent, because you're really, really busy versus being able to view it as a grandparent where you're not having to be so involved in the day to day, has it--

Astington: --and it's not just when you're really, really busy, because when my daughters were small children I was still a botanist and it was that that sort of spurred my interest in child development, but I really didn't start taking undergraduate courses until they were in school so that by the time I was doing my own graduate work they were getting into high school. And now one daughter has two children, the other has three so now I have these five grandchildren and when the youngest one was born I was just reminiscing with Daniela, the email I sent out telling people about my fifth grandchild and saying, "Now I have 0, 2, 4, 6, and 8 year olds. How's that for a developmentalist?" And it really has been fascinating to me to watch these children grow and to see all the things that I've learned in the last generation, in the last 20, 25 years about children actually playing out in real children. I've not ever used them as experimental subjects, but I've learned an awful lot from them and really enjoyed just watching them talk, play, grow. And I think that really is maybe the ways in which they've had bearing on my scientific interests and contributions. They've certainly spurred my interest and they've probably reduced my contributions, because the amount of time I spend with them not sitting at my computer writing papers.

O'Neill: Well, something that was brought home to me just the other day is just watching my three-and-a-half-year-old daughter just get really, really excited about--it was actually a false belief story--I also have never tested her on an actual false belief study, so that fell to my husband, who finally just wanted to see what happened. And she got it all right I'm happy to say, but the part that really struck me was as it was playing out in front of her she actually turned to me and said, "I'm so excited," because the object had just been removed and put somewhere else and she was about to be asked where this other character, but she could already see ahead to what was happening here. And she was just bouncing out of her chair and I thought, I think being in the field so long that those of us who have seen children answer these questions, I mean, you do it over, and over, and over again and yet you can still be surprised 25 years later when the three-year-old gives you the wrong answer, or just about new things like thinking about this emotional side to figuring out these mental states is something that is just really fun, and it taps into their own interests. And I just--

Astington: No, in terms of the excitement of it and that false belief tests, what it reminds me of was my oldest grandchild--the only girl--my granddaughter, who is now ten. I was talking to her just recently. I don't know how it came up, but she was asking me about what I do. Anyway, I was essentially explaining to her about her younger cousin's theory of mind and how they didn't know that--and she was absolutely fascinated by it. And so my other idea for a book was a book about theory of mind for sort of ten-year-olds where they could go and try it out on their siblings.

O'Neill; Then their siblings are going to get even smarter. Josef Perner's work suggests they're already a few years ahead. But if they start training them, they'll do really well.

Astington: Well, this was to test and see if they really were.

O'Neill: Yes, well, I think--

Astington: Well, thank you very much, thank you for all your questions.

O'Neill: --it has been really fun to go back--

Astington: Hope we provided SRCD with everything they want.

O'Neill: Yes, and we haven't given them too huge a transcription job.

Astington: Yes, that too. Well, thank you to the transcriber.

O'Neill: Yes, thank you very much.

Astington: And thank you very much for monitoring us.