

Andrew Biemiller

- Born November 30, 1939 in Milwaukee, Wisconsin
- B.A. in Social Relations (1962) Harvard University; M.Sc. (1966) and Ph.D. (1969) both in Child Development and Family Relations from Cornell University

Major Employment

- Professor Emeritus, Department of Human Development and Applied Psychology, Ontario Institute for Studies in Education/University of Toronto: 2004-present
- Program Chair, Master's of Arts in Child Study and Education, Ontario Institute for Studies in Education/University of Toronto: 1995-2004
- Professor, Department of Human Development and Applied Psychology, Ontario Institute for Studies in Education/University of Toronto: 1996-2004
- Academic Chair, Institute of Child Study, University of Toronto: 1989-1995
- Assistant/Associate/Full Professor, Institute of Child Study, University of Toronto: 1968-1996

Major Areas of Study

- Curiosity, reading, vocabulary, self-direction

SRCD Affiliation

- Member since 1968

SRCD ORAL HISTORY INTERVIEW

Andrew Biemiller

Interviewed by Esther Geva
At the Ontario Institute for Studies in Education
Toronto, Ontario, Canada
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Geva: SRCD oral interview of Andrew Biemiller. Interviewer is Esther Geva and the location is the Ontario Institute for Studies in Education in Toronto and it is June 10th, 2009.

Biemiller: Very good.

Geva: Okay, Andy, we must get going. To start, the first part is your childhood and intellectual history. So the first question is can you describe your family background along with any childhood and intellectual experiences that may give interest? Include educational and occupational characteristics of your parents. Where were you born? Where did you grow up? What was the schooling like? Any military experience, early work experience—

Biemiller: Okay. I was born in Milwaukee, Wisconsin. My parents were both college graduates. They were both born in 1906, neither of them in Milwaukee. My father was a professional politician. He was elected to several different offices, including U.S. Congress, and then he was a lobbyist for 25 years with the AFCIO. I lived about half of my childhood in Milwaukee, Wisconsin, and about half in Washington moving back and forth quite a bit. And I went to one year of high school in Bethesda, Maryland, two years in a Quaker boarding school near Philadelphia and then four years at Harvard and six years at Cornell, ultimately leading to a PhD.

No, I was not drafted. I was fortunate enough to have been first to graduate deferment and then a married deferment and then they said I was 1-A, but I was 26 and so I missed military service during the Vietnam era. I have no regrets about that, because it turned out to be a complete waste of many lives.

Geva: Yes. You didn't have any military experience. And how about early work experience?

Biemiller: My real work experience prior to working at the University of Toronto, which I joined in 1968, was worked summers in the Department of Labor at the U.S. government and then six years as a graduate research assistant, sometimes a teaching assistant, the usual graduate student types of jobs, and after that 34 years at the University of Toronto.

Geva: So you were never a schoolteacher?

Biemiller: No, I was never a schoolteacher. One good job that I did have while I was at Cornell was a camp counselor in Algonquin park in Ontario and I probably learned more about education and teaching in that summer than most of the other things I've done in my life.

Geva: What was going on there?

Biemiller: Well, I was a counselor, nature counselor of all things, in a girls' camp. My wife was also a counselor there and that's how I wound up there. I was very impressed with the model of education in that camp where each kid was working in various different areas pretty much with their choice. The exception was that they had to learn to swim just as children in public school have to learn to read. We perhaps could allow a little more choice about some of the other things. And they had to learn to swim to a degree that they were safe in the water. They had to be able to swim 500 feet. That seemed a practical criterion and I think kids would have understood practical criteria as to what we ask for them in school would be a helpful thing.

Geva: Yes, did children ask why they have to know to swim?

Biemiller: They understood if you were going out in the boat you needed to know how to swim. However, but all of the various areas of work in that camp involved sequences of improved skill you could work on. There was no expectation everybody had to move at the same rate or that everybody had to go to the highest level in everything. You had to become adequate in swimming and adequate in canoeing in order to go on trips. But the camp drew a distinction between what is enough and wanting to do more because you love this particular subject. It seemed to me to be a very plausible model of education, which we could benefit from using elsewhere and not assuming everybody moves at the same rate or to the same pace.

Geva: Okay. What early adult experiences were important to your intellectual development, any collegiate experiences or other experiences?

Biemiller: The first what you might call intellectual thing other than a good education, particularly at the Quaker school, I did a senior project at that high school which was directed by a man who'd formerly been a professor at the University of Pennsylvania, Thomas Conway. He supervised a project I did on rapid transit, a subject in which I was and am very interested. Many years later when I went back to look at that report I realized that had been directed like a graduate thesis. It was a very different quality piece of work than the other things I was doing at that time. That was the first academic sort of thing I did.

Then I think after that there were influences at college. I became very impressed with the field of what they called social relations at Harvard in those days, which was an interdisciplinary department. We had clinical psychology, social psychology, social anthropology, and sociology. Our coursework involved some of all of those subjects, which has always seemed to me to be a more sensible approach to social sciences in the undergraduate years. And for me this was a sensible approach even in the graduate school, because then I went to the Department of Child Development and Family Relationships at Cornell. This continued a focus that all truth was not contained in psychology or all truth is found in sociology. So while I did mostly what you could call developmental psychology—but I certainly don't think that's the only way to think about children or do research.

Geva: No, no, I agree. All right. So in a way you started already to answer that, but what are the origins of your interest in child development. What individuals were important to your intellectual development? Who were your research mentors? Who were your significant colleagues?

Biemiller: Oh, I'll probably forget some of those and prompt me again.

Geva: Okay.

Biemiller: Okay. The first professor who really influenced me was when Leon Bramson, who was an instructor at Harvard and made social relations the subject I ultimately decided to major in. That was in my sophomore year. I hadn't settled on a major up before that. Bramson ran a beautiful course. He taught the section and there were also lectures by various different professors on various subjects (e.g., Robert White, Jerome Bruner, and Talcott Parsons).

Richard Alpert, who had other kinds of fame at Harvard, was, for me, a very good professor who directed my BA thesis on curiosity. I became very interested in curiosity right from that first course in social relations and that continued to be a major interest for many years so I did a thesis on curiosity. My master's thesis at Cornell was also on curiosity in infants.

Geva: So what were you looking at?

Biemiller: In the BA honors thesis, we were simply trying to create a measure for curiosity and so it really involved learning about what measures curiosity. For this project, I developed two different measures of curiosity. The theory of my measures was that curious people would be interested in more different things and that was basically what I was looking at in the thesis research. I was really looking at interests rather than motives. There were a couple of different methods for looking at that and relating the breadth of interests to various other data that was being collected by a large team of researchers.

The MA thesis involved having children, infants 18 or 22 months old, playing with objects. One condition involved many different interesting objects; the other condition had the same number of objects but all the same objects. No, that was actually a pre-study. I did that and then the main thesis was simply exploration of one object and studying children—you could call it habituating. You could call it how did an object go from being novel and interesting to not novel and not interesting and experimenting with different kinds of time of experience.

Geva: —maybe your different perspectives on child development, right?

Biemiller: Yes.

Geva: —this is how I have done it?

Biemiller: Yes, that's right. Then I wound up doing a PhD on reading, mainly because I was a research assistant. In fact, it was a kind of funny thesis, because in working for Harry Levin (professor and chair of psychology at Cornell), who was my supervisor and from whom I learned a great deal about research, being a professional, and getting research funding, all of that. He was a wonderful supervisor. What happened was he had funds for a large study just of reading and he decided to do a naturalistic study of reading in first grade classrooms and simply told me to design the study. So I designed a study and we decided to include miscues, because we'd been working with Ken Goodman and other people at Harry's summer Project Literacy conferences.

Geva: Did Harry Levin ask to prove that miscues work?

Biemiller: We weren't really setting out to do anything. We were just collecting data to see what was there. That's sort of the story I'm telling here. What happened was that after I was starting to pull together the data that we got, I looked at the data and said, "There's a very clear-cut sequence happening in this, and what is happening is that children first make these contextual guesses." This was very different from what Goodman thought was going on. Initially you got a lot of contextual errors, almost guessing the way the story goes. Then they started to attend to the print. A big indicator of when they started attending to the print was when they came to a word that they couldn't read, they stopped. We called these stop errors. Now you call such errors non-responses. And children would quite suddenly make more than half of the miscues be non-responses. And then after a little while you'd start getting responses again but now you would get a mixture of graphic and contextual errors. And so the earlier that happened the better off the child was at the end of the year.

Geva: So the earlier the transition, the better the child was achieving

Biemiller: Yes. But at any rate, I made these observations in November and said how I thought how children would do in the rest of the year. Indeed, the data played out exactly the way I thought it was going to play out. And then the next year I started talking to my supervisor about doing a thesis on curiosity and he said, "No, Andy, you've already done your thesis. All you have to do is write it up," and so I wrote up my thesis. That's how it happened.

Geva: Wow.

Biemiller: When that was published it was the most cited paper in the *Reading Research Quarterly* for ten years running.

Geva: Yeah. So what did Goodman say about it?

Biemiller: Goodman never quibbled with it and agreed with what was in the data. I think the even more critical data for his concerns was what happened later when I did a study which was actually done as part of that thesis, but it wasn't published till later. At the end of the school year we also ran a series of tests where we gave children very easy passages and moderately difficult and very hard passages and I pointed out at that point if you looked at the errors that children were making on the passages when they were making low rates of errors that's when you got the so-called contextual errors that Goodman admired and liked. And as it became more difficult—and for different kids it was different passages that got more difficult—when they started making more than 5% errors, the contextual errors drop out and there is evidence from increasing graphic errors that the children are attending to the print on that particular word and trying to figure out what it is from the print, not the context. And almost all kids did that. I had about eight passages I used in that test.

Geva: Independent of the difficulty of the text?

Biemiller: What mattered was the difficulty of a passage for that kid—not just an arbitrary level of difficulty.

Geva: Yes.

Biemiller: The difficulty of a passage for a particular child determined what kind of mistakes you were going to be getting. In fact, good readers who were doing well in the school actually got much more graphic than poor readers. Their so-called graphic errors that Goodman always thought was a sign of—

Geva: Of poor reading?

Biemiller: When children start making mainly graphic errors on a particular passage, such reading miscues was rather a sign that a child was having difficulty at that level of difficulty. Indeed, poor readers, if you gave them something that they were not making a lot of mistakes on, they too adopted

a more contextual strategy. It would indicate that, in effect, if they're using contextual strategies they're really understanding this passage and that when you forced children to a point that they're making graphic errors to a considerable extent they weren't understanding so well. I think this was really kind of important and was a little different from what the whole language people were thinking at that time when they were saying don't teach phonics. They were all using phonics. It just depended on how hard a text had to be before they had to use phonics.

Geva: That's right. And were the differences in contextual error, the quality of the contextual error? So how did you decide if an error was contextual or—

Biemiller: Well, errors—miscues—could be both graphic and contextual at the same time. I could classify it both ways. I used very low-level criteria. It was a graphic error if the first letter of a word corresponded to what they said, if they were at least attending to that. And that was all I used. For contextual, did it make sense up to and including that word in that sentence? It didn't matter whether it corresponded with the rest of the sentence, but up to that point was it grammatical and make sense? That was all I used. Much richer methods had been used by Rose-Marie Weber (professor of linguistics at the University of Albany, SUNY), a colleague in Project Literacy at Cornell. And she always maintained that my little quick and dirty method was a much better way to teach teachers to use it and that you were getting most of the information you needed. At that level you didn't need to get terribly analytic about everything.

Geva: Yeah. Okay, I guess we should move on. So you talked about your research mentor—

Biemiller: Oh, no, after Cornell; no mentors at ICS. In all honesty, Robbie Case was probably the most major influence in my career. I worked with him a whole lot. I studied. I learned from him. In the end we were doing some research together until the time that he died quite suddenly. He helped a lot with getting research funding. He helped a lot with thinking about things over 400 meals in the restaurant, L'Europe.

The other two who really stand out were Don Meichenbaum—I spent 10 years doing research with Don on *Nurturing Independent Learners*, which was the name of the book that we ultimately wrote together—and Jeanne Chall who was a mentor all through the '90s. I think she put my name up for a position at Harvard, which of course I didn't get, but as a result we got acquainted and then become really quite good friends. I used to visit her several times a year. She was particularly interested in the vocabulary problem—that there wasn't enough attention to vocabulary. I had been very aware of it, but I hadn't done a lot about it. Jeanne urged me very hard to go out and start doing research on that. I did and got increasingly interested in it and that's basically what I've been doing ever since the mid '90s.

Geva: —that's why I'm here—the interview, but I would say that—about significant colleagues. You talked about Robbie, Don, and Jeanne Chall. Any other significant colleagues?

Biemiller: Marilyn Adams and Mike Pressley, not so much people that I worked with closely. I knew them both quite well, but both of them did more basically to make my research work known than I did. They wrote about my research, they got me to publish it in various places. They encouraged me.

Geva: Yes, and that's important, yes.

Biemiller: And that's an important thing and I was just fortunate that these people took an interest in the kind of work I did.

Geva: Let's move on. The next question is what political and social events have influenced your research, writing, teaching, or professional activities? So the focus is on political and social events.

Biemiller: I would go back to the '60s, before the Vietnam issue became a big thing, it was a very optimistic time. People felt that there could be great improvement in society and that part of that improvement would come through government action. That was the period when Head Start started and indeed my first wife was a major player in that at one point. She was the Regional Training Officer for New York State. My work around Washington, even before that, had been one of seeing that you can create things, you can make changes. In general there was a sense that our research at Cornell's Project Literacy, which my supervisor, Harry Levin, ran, was the premise that they could find better ways of teaching reading. In some ways those ways have been found. By and large nowadays we know pretty well how to teach phonics, for example.

Geva: Oh yes.

Biemiller: Whereas in the '60s there was still a tremendous amount of debate. If you remember, teaching phonics or not was a great debate. But it took a long time after that ('70s and '80s) to get that settled. Unfortunately by the end of that period, the practical issue of reading got so focused on the decoding that they lost sight of the problem—ultimately the reason you decode is to comprehend, to read and understand, not to be able to play games with print.

But at any rate, the '60s was this very optimistic period until the Vietnam War kind of overwhelmed it all and that became discouraging.

Geva: So the Vietnam War?

Biemiller: Yes, the Vietnam War. Then things ran very differently, especially in the U.S., after that. At that point in '68 I was offered a job here in Ontario and I took it—never regretted that decision. And here, I would say, to a much greater degree people continued to have a fair amount of faith for a long time that with better education and other financial supports and what have you we could run a better society. And I think in all truth my belief and experience is that we do exactly that in Canada. We don't do it perfectly, but I think we do it better than the U.S. does.

Geva: Oh, I think so, yes, actually, as another immigrant to this country. All right, let's move on. What—would you characterize the development of your ideas in the field of child development as evolving a rather straightforward fashion or in a way that involved sharp turns in theoretical views or research style?

Biemiller: I see most of my movement as sort of a straight line. There was some change in the subject of what I looked at. I did a lot of work on reading from graduate school through the early '80s. Then I did a lot of work on self-direction for a decade with Meichenbaum and then I started to work on vocabulary and that's what I've been doing ever since. But in all of those I always had a perception that growth in people develop in much the same ways, but not at the same rate. Some of the writing of Willard Olsen, almost forgotten nowadays, but had great influence on my thinking. And by documenting exactly that sort of pattern that people get to the same point at different times and that we ought to think a little more that way about education. That doesn't mean we shouldn't do a good job and accelerate as much as possible, but they're still going to not all come out exactly the same. The minute we start saying things like everybody will reach "grade level" then we either have to set grade level very low or not everyone will reach that point at that point in time. I would much rather see us much more concerned with kids actually reaching levels of accomplishment with relatively little emphasis on when and a lot of emphasis on the fact that they actually do it. And frankly, I have not encountered anything in my work over the years that's changed that way of thinking about things.

Geva: And you definitely talked about the whole self-direction work that you did with Meichenbaum.

Biemiller: Yes. And in that work we started out with a lot of observations of self-directive talk in classrooms. One of the things that began to hit us fairly early in the game was that in the classroom

some kids were indulging in a lot of what we call task-directive speech, which is either talking to yourself or talking to someone else about how to do work. In the case of talking to someone else about how to do the other person's work or in talking to yourself about how to do your own work, you see both of those things happen in classrooms. Then there are other kids whom you see asking, "How do I do my work?"—but that's not task-directive speech that's seeking direction—or no talk at all. Clearly the kids who were doing the task-directive talking were the kids who were on top of their subject. Well, this led us to taking a developmental approach and saying, well, if other kids are going to take a task-directive position then they have to be working on something they have pretty well mastered. And so we actually set up an experiment to have less advanced children work on things they'd mastered and help younger children on such tasks. That's exactly what happened. The kids who were never seen to engage in task-directive speech in a classroom would use a whole lot of task-directive speech while helping kids from a couple of grades lower on things that the older kid would know and understand to be able to do but the younger kid didn't. And, furthermore, we then ran a further experiment, which was a thesis for Alison Inglis in which she taught kids how to be really good tutors. In this project she really taught them how to be a good helper and not just tell the other kid how to do it, but lead someone into figuring out how to solve the problems they were working on. Those tutor children who were poor in their own classroom in math became very much more competent, particularly at applications, at solving problems. We weren't teaching them new math skills. That simply wasn't what we were doing. But what we were doing was creating a situation that resulted in making much better use of the skills they did have, which is what they were doing in the math problem solving. And we also had them change their whole attitude towards school. For example, two kids who were going to be sent off to a behavior class were taken off that list because they'd gotten excited about their schoolwork.

Geva: Yes, they got engaged.

Biemiller: Yes, exactly. But again, you notice that's a developmental approach. It's saying if the problem is balancing the demand on the kids for the ability that the kid has at that point in time, and you have to be sensitive to that issue and not just—the minute you say all kids will do something in a particular year you're going to create a situation where a lot of people at their very best are just grasping and often not really mastering their subjects. We haven't really made all kids at "grade levels" of achievement. And I point out within the older standardized tests so called "grade level" was medium performance. That means half of them were below that and a quarter of them were substantially below "grade level."

Geva: That's right.

Biemiller: Simple rule of thumb that I found just examining old school records—this was an Olsen type idea—is that the range between the 10th and the 90th percentile turns out to be about equal to a grade level. So a fourth grade who had kids who were at the 10th percentile were two grades below and two grades above for the hot shots. In sixth grade, 10th percentile children were three grades below, while 90th percentile children were three grades above. In eighth grade, the 10th percentile children were four grade levels below median. I don't know how well it holds after that because standardized tests only ran to grade eight. And we live in a world that just doesn't act like those ranges are there at all or act as if they can wipe them out with educational practice. I believe they can reduce them. I believe even more importantly they could have kids who, when they finish school, can finish really decent and competent at what they set out to do. But I don't think they can all do it exactly the same time. And when we make a big emphasis, you know, did they graduate in that year, I think it's a huge mistake. One of the things we should be doing, if we could get them in by grade eight really with enough reading and enough math to be able then to handle their high school program. That may mean that some of them are 13 and some of them are 15 to be at that point. And I don't think it has to be a huge range, but I think you need at least a couple of years for it. Then in high school I think you could let them spread out again. Some of them could spread out by not taking so many courses per year. And then the issue is not that you have a right to schooling till 18, but that you have a right to X credits, which may be taken over a longer period of time.

Geva: I actually very much agree with you.

Biemiller: And that's a developmental approach.

Geva: Yes, we just ran a conference on learning comprehension in immigrant children last week and one of the slides that I showed in my presentation was a project that was done in British Columbia where they gave immigrant kids—they showed that if—first of all, if you're an immigrant the older you are when you come to this country the less likely you are to finish high school. In general that's—if you allow them to finish high school in six years instead of four years the number of children who finish high school—

Biemiller: Would increase?

Geva: —increases dramatically.

Biemiller: Yes.

Geva: And that's exactly the point you're making.

Biemiller: Yes.

Geva: —more time—

Biemiller: Students can take a little longer. Don't just force them to go through and fail courses, but rather take fewer courses and do what they *can* do.

Geva: And I think the boiling point is that it has—how we manage because our system—

Biemiller: Yes.

Geva: —has to be a different way that allows—that gives the credit—it's exactly what you're saying—that gives students credit for what they *are* achieving.

Biemiller: Yes.

Geva: It just takes you a bit longer.

Biemiller: And it's not a big deal if it takes longer. And that goes back to that camp. That's where I learned that. Some of the kids learned to swim in two weeks. Some of the kids took three years to get to that level.

Geva: That's right.

Biemiller: It didn't come so easily to some of them.

Geva: Yes, of course.

Biemiller: And some of them—they were like artists—whatever talent you're particularly calling on.

Geva: Yes—for teacher training—

Biemiller: Yes.

Geva: —yes.

Biemiller: I used to preach that to my students year after year. Of course, in the recent years, the Ontario curriculum became increasingly more and more rigid about what students must do in each year.

Geva: That's right, that's right.

Biemiller: —and there was no room flexibility. And it just amazed me. I'm not altogether sorry to be out of teaching at this point.

Geva: —the teachers actually—yes. Okay, let's move to personal research contributions. It's a different category. So the first question is what were your primary interests in child development at the beginning of your career? I think in a way you answered that already.

Biemiller: Yes. I'll just say it again very briefly.

Geva: Okay.

Biemiller: In terms of research areas the 1968 to mid '80s was on various fairly technical reading kinds of things; reading speed, reading miscues, that kind of work in various different ways, but it was all around that. I even standardized a test on reading speed during that period. And then I think I partly just got a little tired of that subject and partly had no luck getting people to use the reading speed test that I thought would provide a fairly quick and easy measure of reading achievement and reading problems.

About that time Don Meichenbaum came by and gave a talk at the Institute of Child Study. I was very excited by what he had to say about self-direction. I had been musing about self-direction and reading Vygotsky's work for some time. I proposed to do some work with him and he agreed. We collaborated for the next ten years on applications of some of his ideas about self-direction in a classroom educational context. He'd been using cognitive self-direction with hyperactive kids. He hadn't been looking at it just as a general classroom issue and that's what we did and both felt it was very worthwhile. Again, I think the work in our book that ultimately culminated from that research—we also have some journal articles and book chapters. Unfortunately, this came just about the time that the education system was moving very rigidly into a skill focus and with very little attention to our ideas about either the applications or self-direction. You have a parallel development of skills and the ability to apply the skill, but the application work does not lend itself to simple right/wrong answers. Sometimes you can say what was wrong, but there can be five different ways of solving a problem, all of which will work. Some might be more efficient than others, but that's not the point. The point is that a kid must understand the skill he's got and the problem he's got and can use the skill in the problem. And there's not so much room for that nowadays. In particular, how do you assess applications that do not lend themselves to simple right/wrong responses? You know, multiple-choice testing—pick the right alternative. Thirdly our belief was that kids would really benefit from ensuring that each kid was spending some time in a mode in which they were really on top of things and were exercising self-direction, and exercising a direction for other's tasks. We felt this would improve their ability to apply and often improve even their understanding of the skills that they had acquired. To do that kind of thing—we thought we knew how to arrange a school that would do that, but you can't do it in a school that's being as rigid as present schools are.

Geva: No, no. Okay. What opportunities in your work are most significant? What shifts occurred? What events were responsible?

Biemiller: Well, I was just saying the shifts from one subject was kind of—

Geva: You were just answering that, yes.

Biemiller: —and I think I've done what I could do in that. And the self-direction we did for ten years or so—and I think, again, we pulled it together. I could have gone on. I had to make a decision whether to do more work on the vocabulary or more work on the self-direction. More work on self-direction would have been how do you really make that work in classrooms on a large scale? And I think, frankly, on the one hand there was little will in the education system for the kinds of things we wanted to do to classrooms. On the other hand there was a great need in the area of vocabulary and both Robbie Case and Jeanne Chall were really urging me to work on vocabulary. That was more mentoring, if you will, which pushed me in that direction. And I didn't regret it. That really took off.

Geva: Yes, openness to that.

Biemiller: Yes.

Geva: Okay. Please reflect on the strengths and weaknesses of your research and theoretical contributions, the impact of your work and its current status.

Biemiller: Well, the early stuff on reading miscues and reading speed was widely cited—

Geva: Yes, that's right.

Biemiller: —you know, a fairly little technical part of reading. The self-direction—I think we really came up with some very good ideas about how schooling ought to be done, but we live in a world which is not, at the present time, particularly interested in doing more with application or self-direction. Maybe the new government will go different ways, but I'm not seeing a whole lot of that. It's more and more regulations from the top and fit the kids into the peg holes and so forth.

Vocabulary work—I think the most important thing I found was that vocabulary develops with a very well-defined sequence. I wish I knew more than I do about why the sequence is as strong as it is and exactly how that works, but I know that you take kids—my example would be a child in second grade, one in fourth grade, and one in sixth grade, each one of whom appears to have what would be the equivalent of about 8,000 words. They will have 80% or more same word meanings. The average percentage of meanings known are very, very highly correlated across ages and then you can identify sequence. There are certain words that come earlier, then another set, then another set. You can really sequence the words quite well. Having discovered that the sequence exists means that you could figure out what words you ought to be making sure kids know as they move through elementary school, and that's basically what I've been working on since then. I've worked on both how we do vocabulary instruction and, even more importantly, what actually are the words that we ought to know. And I have published that.

Geva: Oh, you have a book out?

Biemiller: Yes, the book's out. I brought—I wish—they're charging an outrageous sum, \$100. I brought that copy [shows] to give to Cathy Boote. Cathy Boote did half the work. I ordered another copy for Dave MacDonald, who did the other half of the work.

Geva: Did you get a special rate?

Biemiller: I think I can get \$78, but—

Geva: Because I would like one.

Biemiller: I'd love to get them, but it's—I can't in good conscience tell people to get that expensive a book, which 9/10 of it is a dictionary. There's just 30 pages or so of actual text and yet it pulls together everything I have to say about vocabulary.

Geva: —the product we have now together is a continuation of that—

Biemiller: Yes. Now I'm doing a lot of new work on very young kids. Gail Kearns and I did a project on group testing vocabulary, kindergarten, grade one, and grade two, which meant it had to be for children who couldn't necessarily read well enough to take written tests. Now I'm working on even younger children. What are the words you need to know at ages three and four? There was more guesswork and less hard data in that chapter. I had a lot of hard data to back *Words Worth Teaching*. I don't have such data for the three to five year old children. I'm more using already existing data and a lot of judgment.

Geva: Okay. So the next question is—you talked about—yes, the issue that you talked about is your strengths and weaknesses in your research, so what you didn't talk about is your weaknesses. Are there anything that's kind of—

Biemiller: In absolutely honesty I don't really have anything that I think I've done that went wrong.

Geva: Okay, that's okay.

Biemiller: The only thing that should be corrected is in my first book on language. It was *Language and Reading Experience* in '98, which I think was a good book. I'm quite proud of it. But at the end I put in the 3,000 words that are used in the Dale/Chall list. What those were were words known in grade four by 80%. Now, in fact, there's a whole lot of the 3,000 words that are on my list, because they were under 80%. They always said it was over 80 but it wasn't in their own books. But the fact is 2/3 of them are words I would now classify in there as easy. You probably don't need to worry about them in elementary school, even in primary, and that the words we should be worrying about are exactly the next wave of words which come right after those. And that's the only thing I really feel I've said that I would take back, that was the 3,000 words.

Geva: Good intentions, right?

Biemiller: Yes.

Geva: Okay. Let's move on. What published or unpublished manuscripts best represent your thinking about child development? Which of your studies seem most significant? Which contributions the most wrong-headed?

Biemiller: Well, I just said about—

Geva: You sort of talked about it.

Biemiller: —I would say that on general development it's distinct from all the specific works on vocabulary. There are two specific things. One is that book I did with Meichenbaum where we really did lay out our ideas, particularly in the middle of the book, the same developmental approach you've heard me talking about here. I also published an article in '93 in the *Educational Researcher* in which I was just describing ranges of developing achievement and the age. I proposed the perspective that you ought to be more concerned that they get there rather than *when* they get there. That article appeared in 1993 in the *Educational Researcher*. It was titled "Lake Wobegon Revisited" and I really think that was my best statement of what I think of as a developmental approach.

Geva: Right, okay. Okay. Let's move to—let's talk about funding now. So the question is please reflect on your experiences with your research funding apparatus over the years. Comment on your participation in shaping research funding policy, implementation, pursuing support for your own work and related matters.

Biemiller: Funding. I never had much money. I didn't get into what you would call large-scale funding until in the '90s, first with Meichenbaum. We had a large Social Sciences and Humanities Research Council of Canada grant and—

Geva: SSHRC?

Biemiller: —SSHRC and then Robbie Case and I got a SSHRC grant to study vocabulary—yes, that's right.

Geva: —[also has a SSHRC grant]

Biemiller: Good for you. Thank you. And then Robbie and I got a similar grant from the same source and—

Geva: So federal funding?

Biemiller: Yes. And I got a follow up on another one on that, and there's a little funny story on that last one, but basically we were getting pretty much what we asked for, which was in the order of 80-, 90-thousand dollars at a time to be used over two, three years. The last one was funny. That was after Robbie died and I had put in an application to continue the work, and particularly what I was asking for was the work that led to this book. The first time it was turned down and they give you two reviews. One review said, "It's wonderful. You should support it," but the other one said, "Biemiller can do what he says he's going to do, but I don't approve of what he wants to do. He's going to make lists." And that's exactly what I was going to do. And I wrote back to them. I resubmitted it the next year and I said, "Turning it down, not because she says I can't do it, but because in her opinion she doesn't approve of lists is not a good reason to turn down a grant. And you don't just blindly say, 'Who approves? Who doesn't?'" And all I can say is at that time I had positive ratings and they gave me every cent I asked for, which was unusual from SSHRC. So I think they were a little embarrassed.

So SSHRC indeed paid for half of the project and then I said, "Gee, I really ought to do older kids as well." So that's when we did the upper elementary. And I was thinking do I really want to go through a SSHRC application again? The process is long and painful, as you know only too well. There are many, many, many, many, many pages. I knew I ought to do—this was after I had retired and I happened to mention to my publisher SRA that, "Gee, I wish—" "Oh, let us pay for it," they said, "just write up a page or two." So I sent them in a page or two and then we actually quibbled for five months because I wanted it absolutely clear if this material was published for public use and not just for proprietary information for the company. And they started right out saying, "Yes, we support that," but their lawyers didn't. I actually have a contract that I can distribute to whomever I want whenever I want irrespective of copyright.

Geva: Sure.

Biemiller: And I got that and we published the book now, which they have published, which can be bought by anyone. And that's really all we were asking for was just that it's not proprietary. It's publicly available. I wish it was publicly available at a reasonable cost, but at least it's publicly available. And I have sent numerous CDs out that have the same information on them.

Geva: And a project that we have together—

Biemiller: Yes.

Geva: —we submitted to SSHRC for three years and we got the funding.

Biemiller: Yes.

Geva: Yes. And you didn't have any impact on setting research funding policy?

Biemiller: Well, not here. I have been serving now for five years for the U.S. Institute for Education Science and they've just extended me for another year or two. And I sit two or three times a year reviewing research proposals down there. And there I really get a little bit of say over what are you going to fund, particularly things related to vocabulary and language comprehension.

Geva: I was invited—

Biemiller: Yes. Welcome to the club. It's a nice club, that one. So there I have a little input where—and I've also sat on NIH grant agency things, but never up here.

Geva: All right. Let's move now to institutional contributions. So the first question is in which institutions do you work—I think you've kind of talked about it already—

Biemiller: Oh, I would—

Geva: —dates and capacities. You want to add more?

Biemiller: I worked basically at the Institute of Child Study, University of Toronto, which was first a separate unit, then a component of the faculty of education at the University of Toronto, and then finally part of OISE/University of Toronto, but during all that period I was at the same place. I was in charge of the academic program there for about 15 years, what is now called the Program Chair. Before that, the title was Head of the Program at Institute of Child Study. So within that Institute I think I had quite a bit of a say over the shape of how the program evolved over the years. It's interesting. Somebody came in and wanted me to talk about the theories that guided and the truth was that we did not evolve that program with a lot of theory about what it ought to be. We kind of developed it by hit and miss to make things work better and so we moved a little further. We arrived at a balance of practicum courses and then internships and designing what courses we should have. Now, since I've left that's changed some and that's as it ought to be.

Geva: Yes, yes, it's evolving.

Biemiller: Yes, a program evolves and I think we really look more at what's working very pragmatically rather than—

Geva: Rather than philosophy or theory?

Biemiller: Yes. I think we—the only other philosophy we do is that all the students take child study—child development—and we I think continued both a developmental perspective—the same kinds of things I've been talking about here—and at the same time a good teacher needs to make decisions based on some good reason, what works, what has been published, but what works trying to get our students to take that kind of perspective, not just a practice, practice, practice with no basis behind it.

Geva: No guiding principles.

Biemiller: No.

Geva: Much more about that—

Biemiller: Yes.

Geva: Okay. I think the next question probably is not directed to you, because it says—connected with well-known research—such as NIMH—

Biemiller: Only—no, I would say the only contact is the one I already mentioned, which is that I've served a good deal on the Institute of Education Sciences on reviewing things, but I've never been a member of the staff there or anything.

Geva: NIH always is a well-known institute.

Biemiller: Yes. I don't think that's what they mean. I think they mean the big federal agencies and what have you.

Geva: Okay. So let's move on. Describe your experience as a teacher of child development research and a trainer. What courses have you taught? And also please comment on the tension between teaching and research in the field of child development.

Biemiller: Okay. Now let me—just a second. Courses I have taught—there's been quite a range. For many years I taught child development and research methods with children. When I first came to the Institute of Child Study I was very interested in teaching research methods. As the years went on there really didn't seem to be that much of a demand or need for that and instead I would incorporate research methods to some extent in a course of child development. I taught that for quite a while. And then I taught a course here at OISE from back in the '80s called 1241, which really, as taught by me, involved two things. On the one hand it was research methods, again, as applied in early childhood, and on the other hand it was the study of a lot of studies of intervention type programs in early childhood and so that we weaved back and forth between methods of research and the actual early childhood programs. These studies involved daycare class size and various other studies and interventions that were trying to improve outcomes. Out of that came several students who did theses.

At the Institute I increasingly was involved, from the mid '70s, more with the straight teacher education programs. I had first-year students who were learning to be teachers from a neophyte who'd never been in a classroom except for a few days. I was always up front about that. Yes, we did pretty well. We developed very good working relationships with our associate teachers in the field and worked with them on a much more personal basis than is typically common in the teacher education programs. Then after a while I wound up doing the second year course, so there were two mainline education courses in that program plus, of course, a curriculum course that was separate from that. In the second year course the main focus was planning a classroom for a year. We would really play around with different aspects of what needed to be planned for and take a perspective and to relate that to real concrete classrooms with it, so they actually had to go and work, ultimately put together a project. If classroom X was your classroom what would you do in it?

Geva: Right.

Biemiller: And my students got to pick where their classroom projects were going to be. I worked with various different organization systems with the students and finally settled on teams of two to work on that. I found teams of two tended to maximize the merit in talking to each other and working. Once they got more into larger groups you got into arguments about who was doing the work and who wasn't doing the work and what have you; with groups of two that didn't seem to be a problem. So that was generally how I wound up doing it and then a fair amount of student feedback on it. I liked when two or three teams were doing the same grade and would come up with quite different solutions. The point was that their solutions were different—they were the same grade, but they weren't at the same place or the same children. And their programs shouldn't look the same. You need to take into account who are the kids there, how are those kids functioning? What can they do?

Geva: Of course.

Biemiller: And are there five kids going off to special education or not? The other thing was the most ultimate practical kinds of things, you had to work your way around a time table, you had—how much

time do you really have with those kids? I would make them plan how are you going to deal with the reality that some of the kids are at a low level of achievement but some of the kids are fairly advanced? How are you going to address that in your classroom? And just ignoring it is not a good solution!

Geva: No.

Biemiller: So those were the kinds of things that we did in that course. I was quite proud of that course.

Geva: —that course. All right. Let's move to—the next category is your experiences at SRCD. So the first question is when did you join SRCD, what were your early contacts and with whom, and start with the first biannual meeting you attended?

Biemiller: Well, I joined it probably in 1968 when I started as a professor. I think the first meeting I went to was in 1981 in Detroit. Robbie Case dragged me along, you know, "You've got to come." And since then I've been going to a lot of conferences and what have you, but before that the home situation made it difficult to do that. More generally I have to say I've had almost no active relationship with SRCD. I read my journal with great interest. I looked forward to it coming and now it comes even by computer, but it comes. And I have reviewed articles for them and submitted two articles that were not accepted.

Geva: Okay. So in a way I think you've already addressed the next question. But I'll read it to you just in case you want to add something. Describe the history of your participation with scientific meetings and publications of the Society and other non-governance aspects of the work of the Society.

Biemiller: Now what is that saying? Really I've not had—I will just mention in passing that I was Associate Editor of the *Journal of Educational Psychology* for three years, so it's not that I've never done any of those things. It's just I haven't done them for SRCD.

Geva: Yes. And then again governance—so you really were not involved in SRCD governance?

Biemiller: No, I wasn't.

Geva: So I think we can move on. The next question is what do you believe are the most important changes to occur in SRCD and its activities during the years of your association with it? Have you seen any change in activities?

Biemiller: I haven't been terribly conscious of—there've been different changes in the format of the journal. Generally the journal's been good, a great many interesting articles. I think that's about all I have to say.

Geva: Yeah. And definitely from my perspective there are a number of people attending, double or triple, which makes it less attractive to me. Okay. The next question is about the field. Please comment on the history of the field—I guess they're talking about child development—during the years that you have participated, major continuities and discontinuities, events related to the continuities and discontinuities. Have your views concerning the importance of various issues changed over the years? And if so, how?

Biemiller: I would say the following thing: first of all, child development as it existed in 196—

On side two—

Geva: Yes. Well, let me repeat the question. The question is to comment on the history of the field during the years that you—

Biemiller: That's right.

Geva: —participated.

Biemiller: Yes. The field was definitely becoming more “scientific” right around—you know, I'd come to start graduate work in 1962 and I was actually in the New York State College of Home Economics at that point—

Geva: You were?

Biemiller: —which is part of Cornell University. The department faculty included people from psychology and sociology and there were very excellent people in our child development department: Uri Bronfenbrenner was there, Henry Ricciuti and Alfred Baldwin were there. I studied with him. Harry Levin, who became Dean of Arts and Sciences at Cornell, was in the Child Development and Family Relationships. It was, in fact, in the State College of Home Economics, which now styles itself the State College of Human Ecology. And they still have a lot of very, very good professors in human development right now at Cornell.

The second thing that was happening about then was people had become terribly interested in the work of Piaget. So, of course, we studied a lot of Piaget, but that was not the whole of what we studied. We were starting to study new cognitive theorists: Ulrich Neisser, who was at Cornell at that time and worked on cognitive psychology; Miller, Galanter, and Pribram's book on *Plans and the Structure of Behavior* was perhaps the most influential book I read during that whole period. It still partly shapes my thinking. It meshes very well with Robbie Case's work and way of thinking about things.

Geva: I remember him—

Biemiller: Yes.

Geva: —from my studies in psychology, yes.

Biemiller: —was a brilliant little book, very fine ideas, and I still use it as a way of thinking about things. So it was just becoming “more scientific.” A book had just been published on research methods in child development. A couple of the authors were in our department, but Ricciuti in particular. So those are the kinds of things that were happening then. It was becoming more scientific and at the same time child development is distinct from psychology and tended to have a more practical focus. And I think that did not altogether disappear. They had a professor of early childhood—some of the others were working on applied issues. Levin was working on reading, that kind of thing. And I think by and large they never moved away from maintaining a partly pragmatic applied—we used our science to address practical real world problems, which was different from some of the other child development departments of that time when they were becoming very, very abstract.

Geva: And scientific, yes.

Biemiller: Scientific meant somehow not useful. And I think that department then—and as far as I can make out any time in between—has included people who tried to be very good scientists, but who also had an ongoing concern with real world issues. During the '70s and '80s I think there was some movement away from application if you read the kinds of things that were in *Child Development*, for example, whereas I would say the last ten years you're seeing a lot more issues of race, of poverty, of—

Geva: Right, diversity—

Biemiller: —diversity, multilinguism, bilingualism, those kinds of issues fill the pages now. And that's fine with me. So in essence I don't see the field has changed as much as in the sense that I'm maintaining it had and continues to have a kind of a mix between trying to improve our basic understanding of development, but at the same time retaining roots in real world problems as you yourself have demonstrated.

Geva: Of course. Yes. Okay. What are your hopes and fears for the future of the field?

Biemiller: As far as I can see, the field is prospering fairly well, sometimes under the label of child development, sometimes under the label of developmental psychology, but as far as I can make out it continues to be concerned with basic and applied issues. I think the one place where you're not seeing as much of a developmental focus as we should be is in education and that's less developmental now than it was 15 or 20 years ago. But other than the fact that they seem a little disconnected from education I think the field remains a healthy field. It was at its weakest, oddly enough, right at that time back in the '60s. I'm remembering a number of institutes of child study were closed during that period and, indeed, the one that I worked at in Toronto was threatened. I arrived in 1968 and three months later the University of Toronto announced their plans to close the Institute of Child Study.

Geva: Oh really?

Biemiller: Yes.

Geva: I didn't know that. Yes.

Biemiller: And there was a big ruckus—I'm not going to bore you with the long detail, but ultimately it wound up there was a review, the review said, no, you should keep it, you should strengthen. The administration said again, "We want to get rid of it," and at that point the Faculty of Education said, "We'd like to have it and we have money we don't know what to do with," which was a strange thing, but that was the state of affairs at that point. So the Faculty of Education took us up to be a little jewel in their crown. Now, sadly, the Institute of Child Study was not run that well. We had a very poor director for many years and it was not a heavy research place until Carl Corter was appointed by Dean Michael Fullan. Carl Corter was a brilliant director of the Institute. I sought to be director at that time. I am very, very glad I wound up not getting it and he did, because I would never have done half the job he did. We had a very poor administration up till that time and I thought I could do it better than that, and I probably could have, but I learned from Carl how to be a really good administrator. He reminded me a lot actually of Harry Levin, who was also a very, very good administrator. He was a better administrator than—he was a good researcher, but he was a brilliant administrator and some people have that talent. To be a good administrator you're can't be anyone's buddy, which I think is a necessary part of being a good administrator. You're learning that the hard way probably.

Geva: I am. Yes.

Biemiller: But even more a dean or a director of an institute has to be that way. At any rate, so then the Institute of Child Study prospered greatly. He brought in lots of really good people—Janet Astington and various others who've come—and it's now a bright spot in the research operations of OISE and the Department of Human Development.

Geva: Yes, definitely. So the last section is entitled personal notes. And the question is please tell us something about your personal interest and your family, especially the way in which they may have had a bearing on your scientific interest and contributions or on your applied contributions.

Biemiller: My personal life? I've been married three times. The first one was not very successful except we had a great son. The second was a very happy marriage. It only ended when she died. And the third looks to be a happy marriage again. That's a good thing. The second person I married was also the person in whose classroom I did half my PhD thesis. We knew each other very well for many years before we were married.

Geva: Right.

Biemiller: She was widowed, and one thing and another led to our getting married. We'd been very good friends, but not a romance before. My second wife was a teacher, of course, and so we had a lot to say around our work and she would come and help sometimes in the field with research. She was very good at working with kids in the field. So there was more of an ongoing simpatico. Ruth is interested in what I'm doing, but she hasn't been a teacher. She has worked with mentally retarded people some considerable amount, but she has not taught. My son is now a principal, so he's followed in that educational role. I think it's a very tough row to hoe this year, with the staff, not with the kids or the parents, it's the staff that is hard.

Geva: Introduce him to Carl.

Biemiller: Yes.

Geva: Okay. Is there anything else you would like to add that somehow reflect on or—

Biemiller: I can't think of anything else. Can you or—

Geva: No.

Biemiller: Did we cover it?

Geva: On a personal note, I'm really pleased that I had the honor of interviewing you. I always admired your work and yet even though you are retired now—

Biemiller: Yes.

Geva: Thank you, Andy.

Biemiller: Okay. Thank you very much.

(End of Interview)