Dr. Reiko Mazuka Full Transcript

Laboratory Head (Ph.D.)

Laboratory for Language Development

RIKEN Center for Brain Science

This interview took place on June 28, 2022, in Wako, Japan, at the RIKEN Wako Information Science Bldg. Room 411.

Career summary

1981   B.A. in Psychology, Nagoya University

1983   M. Litt. in Psychology, Nagoya University

1984   M. Sc. in General Linguistics, University of Edinburgh

1990   Ph.D. in Developmental Psychology, Cornell University

1989   Lecturer, Department of Psychology, Duke University

1990   Assistant Professor, Department of Psychology, Duke University

1997   Associate Professor, Department of Psychology & Neuroscience, Duke University

2013 - present   Research Professor, Department of Psychology & Neuroscience, Duke University

2004   Laboratory Head, Laboratory for Language Development, RIKEN Brain Science Institute (BSI)

2018 – March 2023   Laboratory Head, Laboratory for Language Development, RIKEN Center for Brain Science (CBS)

April 2023 - present   Senior Visiting Scientist, Laboratory for Molecular Mechanisms of Brain Development, RIKEN Center for Brain Science (CBS)

Adachi: Thank you very much for your time today. This project began because Dr. Harayama, former Executive Director of RIKEN, is a board member of the Elsevier Foundation, and the Foundation asked RIKEN to take on a project which would support women researchers and young researchers in Japan. So today, we will not be talking about science *per se*, but rather

about research lab management. For example, we hope to discuss topics which would be helpful to new PIs (principal investigators). I'm looking forward to it.

Mazuka: Same here. Let's get started!

Adachi: Looking over your curriculum vitae, I see that you received your bachelor's and master's degrees from Nagoya University. You also earned a master's from the University of Edinburgh and a Ph.D. from Cornell University. When you received your Ph.D., what kind of researcher did you want to become? Did you dream about having a certain type of lab, doing a specific kind of research? Could you share a little about that?

Mazuka: Since I specialized in developmental psychology, I took quite a different path from those with natural science majors. At that time, developmental psychologists rarely took postdoctoral positions. Most of them went straight into faculty positions after earning their Ph.D.s. Likewise, I didn't do a postdoc fellowship either. While writing my Ph.D. thesis in the last year of my Ph.D. program, I applied for a faculty position and went straight to work after. So I didn't have any postdoc experience or specific plans to become a PI. Essentially, becoming a member of faculty was to get a tenure-track job. That's basically it.

Adachi: So you successfully found work as a member of the faculty?

Mazuka: Yes, that's right. I was a faculty member at a university. I started working at Duke University, which is categorized as a "Research 1" or R1 university in the United States. R1 universities evaluate tenure track for faculty members based on their research for over half of it, with the rest focusing on teaching and administration. As a PI, evaluations are made based on the external funds you obtain and the research you conduct. You need to make progress in your research and write papers or else you cannot obtain tenure. At that point, it's the same as having your own lab and being a PI. It was assumed that those who graduated at around the same time as me and majored in, say, chemistry or engineering, would naturally go on to a postdoc. So after getting their Ph.D.s, they would take postdoc positions for a couple of years at maybe two universities and only then get a faculty position. As social scientists, it was normal for us to find faculty positions as soon as we

finished our Ph.D. programs. Nowadays, it's common for developmental psychologists to also do two or three postdocs, but it was different during my time.

Adachi: When you became a faculty member, did you hire research staff immediately using your own grants?

Mazuka: No. Once you become a member of faculty, you receive a salary from the university, but the university does not provide so-called "research funds." I had graduate students who chose my lab, and worked with them on research. You can't just get a large grant after newly being appointed as a faculty member. The university does however pay a stipend to graduate students, which is enough for graduate students to cover their tuition or living expenses. It's kind of like studying together with the students.

Adachi: So, once you became a faculty member, you shifted from being a student to working with students. What was the biggest difference there?

Mazuka: Uh, let's see… Well, I am Japanese, so I'm not a native English speaker. Of course, I can read, write, and speak normally in English. As a young faculty member, it's normal to be assigned an introductory course to teach in developmental psychology, with a class of about a hundred students. When students didn't understand something, some of them commented that it must be because of the non-native assistant professor's poor English. Of course, it was difficult for me to prepare for all the classes.

Adachi: What about the research aspect?

Mazuka: On the research side, I was able to get large grants from the National Science Foundation (NSF) and the National Institutes of Health (NIH) rather early on as a newly appointed assistant professor. I had been doing research comparing the Japanese and English languages since my doctoral thesis. So I would obtain data on English while I was in the U.S. and then use summer vacation or sabbaticals to come to Japan and acquire data on Japanese. The funding I received was for research comparing English and Japanese, so I used the grant to collaborate with Japanese researchers and used up all my summer vacation time in Japan to conduct experiments. There weren't many Japanese people among

my students. There were students who were Korean, or American. I tried to align with their interests and create a variety of projects with them in mind. That's what I did at the start.

Adachi: Can you share how you aligned with the young students?

Mazuka: Well, in the case of the Korean student, we had one thing in common: neither of us were native English speakers. Since her native language was Korean, we tried projects comparing Korean and Japanese, or ones that also included English for triangulation. I tried taking advantage of what she was good at, what I was good at, and also the fact that we were in the United States.

Adachi: Some people say that when young people first become faculty members or PIs, it's very difficult to get students and postdoctoral fellows to come to work with them.

Mazuka: That's right. Hiring students for the lab varies from university to university and department to department. The psychology department at Duke, where I was, was generous to young faculty members and supported our efforts. Senior members got rather large grants, and with those funds they could hire postdoc fellows in addition to students. So even without external funding, the department supported young faculty members and allocated about two students equally. That was very helpful when I started out. My research centered on comparing Japanese and English. It was a difficult topic to get students who only knew English interested in. I had a hard time finding students, unless they were interested in learning Japanese or other languages. But there were many talented undergraduate students at Duke, and I was happy whenever I got the chance to meet them. At Japanese universities, everyone writes an undergraduate thesis. At Duke however, not everyone has to write a thesis. If you are a psychology major and want to write a thesis, you prepare for it and apply. Then, if your application is approved, you can write your thesis. One of the students I helped through this process excelled and is now a faculty member at a Canadian university. I am currently collaborating with him. I guess I tried a lot of things and did what I could.

Adachi: What kind of effort did you make to attract students?

Mazuka: Well, I contacted faculty members in the psychology or linguistics departments of other universities with talented undergraduates. I asked them if they knew of any good students I could work with. Also, I proactively approached people who seemed like good candidates among applicants. During the hiring process for graduate students, I requested that the interviewing faculty members be sure to meet specific candidates. Even doing that, the number of graduate students for me was small compared to other professors. I was often away in Japan during summer vacation or sabbaticals, and that meant that I couldn't take care of many students. There were pros and cons.

Adachi: How did you find promising students? From their applications? Or the interviews?

Mazuka: You can't really tell much from the applications. Duke is famous for its medical school, so there are many applicants for clinical psychology among psychology majors. Sometimes we had about 500 people applying for only four or five positions. Because of the situation, the standards for accepting students in many academic fields have become very high. For example, in clinical psychology, and it may sound strange to call this a "cutoff," but the GPA cutoff at the application screening stage was set at 4.0. That means that the student got straight A's in undergraduate school. So 4.0 was a prerequisite, and they all had at least that. There were also test scores like the GRE, but applicants got almost perfect scores there too. Some people had experience working as assistants for professors after graduating from undergraduate school and had published papers on their resume. The competition was between people at that level. You can imagine then, it wasn't easy to judge from applications because at that stage they were all pretty high level. On the other hand, when I received an application from someone who had gone to a smaller university, their application might be a bit unpolished, but I could sense that the person was an independent thinker. When I taught classes and asked students to write a lot of papers, I could kind of tell which ones were the thinkers. It's probably the same in Japan. Even when all the students write essentially the same thing, you can tell that this one person is unique or different. You can pick out the bright students that way. There were only a few in each class. The student I talked about earlier—the one who is a professor at a Canadian university now—was exceptional. His papers really stood out among hundreds written by other students that school year. The term paper he wrote as a third-year

undergrad was already far superior to the ones written by the graduate students. You can imagine how easy it is to be attracted to such talented young people! So while it's difficult to pinpoint what makes a good candidate, one important thing is recognizing independent thought. Someone who is inquisitive, and has a "good eye" for things. That's one thing, at least. It's difficult, though. It's like the person has a knack for it. You recognize it when you read their papers.

Adachi: Thank you for that insight. Among the people you chose to work with, were there some who didn't work out like you thought?

Mazuka: Yes, there were many. For example, there were excellent students that, for some reason or other, quit in the middle of their Ph.D. program. Two graduate students were in a relationship, and one of them got a job. The other said, "Well, I already have my master's, so that's good enough. I'll leave too." And they quit. There were also quite a few people who quit after trying research for a bit because they felt they were not suited for it. If you feel you aren't suited for research, you should quit early. Maybe "quit" is too strong a word, but I think it's important to realize what the work is like and whether you are suited for a research career. I think that's good. There were a few students of mine who were like that. After they obtained a master's degree, they decided that was enough. They told me that they were satisfied with their master's degree, but they did not feel like proceeding to a Ph.D. was for them. As it is not easy for me to tell them that they are probably not suited to be a researcher, it was easier if the students themselves realized that and came to tell me of their decision. The American system is slightly different from Japan, but you might think of an undergraduate program at an American university as kind of like those high schools in Japan that are well-known for their graduates getting into famous or prestigious universities. That means that you study really hard and get good grades as an undergrad and then go on to a good graduate school. Medical schools, law schools, and even MBA programs are all graduate level, so if you don't get good grades as an undergrad, you won't get in. Undergraduate students in the U.S. are similar to high school students in Japan studying very hard for entrance exams for top level universities, which can determine the rest of their lives. Duke, for example, is famous for its medical school. There are many

undergraduates referred to as "pre-meds" whose aim is to get into medical school. You'll also find pre-meds who say they really didn't want to be pre-meds, but went for it because their parents wanted them to. At first, they go along with that, but when they find out what they really want to study, like literature or philosophy, they go off in another direction. Then there are those who haven't really thought about it, but they get good grades in university, and end up going to medical school. There are a certain number of people who just keep going and end up entering a Ph.D. program in psychology. Like, say you go to a good school like Yale University, and you have a 4.0 GPA: all A's. Well, you got all A's in psychology, so you just go on to graduate school. Something like that. "So, well, here I am. What's next?" is kind of where they were. But along the way they might ask themselves whether they're truly suited for research. The graduate schools at Duke basically only take in people who want to pursue a Ph.D. They don't accept people who just plan to leave with a master's degree, but there are some in the master's program who decide that's enough for them once they finish. Essentially, the Ph.D. programs are tailored for people who want to become researchers. Some get in, but then they step back and see that it wasn't what they had expected. As an undergrad, if you do the homework as you are told, write the final paper, and get good grades, you are at the top of your class. But as you go higher, that becomes less and less the case. A student may decide that they are not suited towards going out and finding topics on your own—exactly the kind of skills a researcher needs. There are a surprising number of people who are simply good at doing exactly as they are told. I think that there are many people like that who get good grades early on but then suffer later. Maybe it depends on their field of study, even at the same graduate school. For example, in the medical and scientific fields, there are some fields that have a rather clear picture or roadmap of what needs to be done next. This is not true, of course, for science involving breakthroughs which go on to win the Nobel Prize. There is a way to work without thinking so much about finding new topics or deciding what kind of research you want to do yourself. You can just think about what's needed next, do it, and you'll get your thesis published. There isn't anything wrong with that. It just depends on the field, the individual, and, well, probably a lot of other factors too.

Adachi: How do you help students and young researchers who might not be suited for a research role, but don't realize it themselves?

Mazuka: I've approached it different ways. For example, there are people who might flourish if they did something else, but they're doing well right now and believe this is what they want for themselves. Well, those people should just keep working hard at what they are doing now. However, there are other people who are trying their best but they're going in circles. They can't seem to make it through to the other side of the tunnel. So if I see one of those people, and I feel like I should say something, I do. Whether the person takes it positively depends on their state at the time, among other things. It's difficult to say what the result will be. For example, there are university students who don't attend classes regularly and can't submit assigned papers or projects on time. But they find something that they really want to do, and although they don't go to classes much anymore, they work hard at what they really like. There are people like that who are good at computer programming, for example. You might know some people like that yourself. I once spent a long time convincing a student who wanted to be a researcher because he didn't want an office job and join the rat race. It's fine to dive into something you love and follow your passions, but you're making a big mistake if you think that being a researcher means that you can avoid those things. I told him to just take a good look at your advisor! (laughter) I said, "He has to take care of all his students, look after their job search, write letters of recommendation, teach classes, attend faculty meetings. And if he doesn't work hard and do it, day in and day out, the lab can't keep running. And that wouldn't be good for students like you!" I said something like that. "So the professor you trust the most at your university is someone who follows the standard pattern of a researcher becoming a professor. What would happen if that professor said, 'Oh, my research is really going good, so I'll just skip class today.' And then just worked all night long on research?" I told him, "Instead of going to a boring lecture, you decide you'd rather do computer programming and code something great. Your reason for wanting to become a researcher is so that you'll be able to keep doing that? Being a researcher is not as easy as you might think. That's the wrong attitude." If you are a researcher who just wants to do what you like and not do the basic things necessary to earn your salary, you can't survive unless you're a millionaire with a family

that pays for your research and you don't really need to work. I told him he was mistaken and to carefully reconsider. In the end, he was so upset he was in tears!

Adachi: You say you scolded that person and he got upset. I was wondering how you handled that situation. It sounds like you were quite logical with your reasoning.

Mazuka: Well, it's different for each person. And how you tell someone off is the same way. But I'm not that young anymore, so I really can't do something so out of character now. I have to say exactly what I'm thinking in order to get through to the other person. That's just it.

Adachi: Have there been times then, when you and your students or young researchers were not able to come to a mutual understanding?

Mazuka: Yes, of course. I think that happens quite a bit. There are times when I think we've come to an agreement and they move to another lab or university. But I assume some of them still disagree. Maybe not a lot of them, but I think there are cases like that.

Adachi: I see. At Duke University, you went on to become a lecturer, assistant professor, associate professor, and then research professor. Along that career path, did more people gradually come to work with you at your lab?

Mazuka: No, not really. During my time at Duke, I never had more than one Ph.D. student at a time. There were times when there were doctoral students and master's students [at the same time], and students who were writing their undergraduate theses. While the Duke lab did not grow much, the number of collaborators in Japan gradually increased, as did the number of other overseas collaborators.

Adachi: Did you ever hire postdocs in your own lab in those days?

Mazuka: No, I did not. I didn't have that kind of money.

Adachi: It sounds like you had many long-distance collaborators. How did you deal with the challenges around that?

Mazuka: Well, let's see. I could occasionally visit my collaborators in Japan who had their own labs. I was able to conduct research at their facilities, with their students, and even visit nursery schools. I had many collaborators in Japan. I met some very nice people who treated me well. My research was able to progress gradually. It was like that.

Adachi: Do you have any tips for finding joint research partners?

Mazuka: It's like pulling up potatoes. You grab one vine and a bunch of them come along. When there was someone willing to collaborate with us at one place, those connections often spread to other people in that laboratory, and then to their students, and so on.

Adachi: Are you worried that if your research gets too spread out, you might not be able to effectively control everything?

Mazuka: Yes, that's true. I think it's a balance between what you want to do and how much you can do at that time. You have to make sure that if a famous researcher calls on you, you don't just take things on with a smile but then be unable to handle things properly. That's not a good way to work. If I accept offers too readily and fail to do my job properly, I cause trouble for the other party. Collaborative research cannot be successful if only one party enjoys the benefits of the research. There has to be the proper give and take. You certainly don't want to cause trouble for the other party. I was well aware that collaborative research can only continue if it is beneficial to the other party too, so I was careful.

Adachi: Have you had any failures in your joint research? Are there things that you wish you had done better?

Mazuka: There are a few things. It's kind of a gamble to start a new joint research project with someone you don't know well. For the most part, I've enjoyed very good collaborations. Some famous researchers came up to me at conferences and asked me if I wanted to collaborate with them. Most of the collaborations turn out to be great, while a few of them were, well, questionable. I think it's all a matter of luck, and sometimes it

doesn't work out, but that can't be helped. In my case, the base was at Duke, an American university, if I had trouble with Japanese people, I had a place to go back to. When you're based at an overseas university, there are times when you get treated a bit differently or get some leniency. My research field is language research. As it is very interesting to compare different languages, everyone wants to do it. In my case, I can come to Japan and collect Japanese data myself because I am Japanese. But when a non-Japanese researcher comes to Japan and wants to collect data on Japanese and tries to work with Japanese researchers, the Japanese researchers who have never left Japan or have little experience communicating with people from overseas might be "singled out," for lack of a better term, by that foreign researcher. Some of these Japanese researchers become almost like servants to the foreign researchers. The foreign researcher may simply tell the Japanese researcher to do all the work s/he wants done. There are a surprising number of researchers who have been forced to provide a lot of labor without consideration towards their own situation. It's like they can't say "no," or that they don't know how to say "no." Another case is when the professor on the Japanese side who accepted the joint project is a so-called "big-name" male professor. If a professor who is the president of an academic society is approached by a famous foreign figure to work on some research, the person may respond by saying, "Well, I'll see what I can do." Then that president might turn to a Japanese researcher, someone almost like a subordinate, and say, "You've been asked to do joint research by a certain professor. It's a great honor." In that case, the Japanese researcher will probably be unable to refuse the offer. I heard the stories from acquaintances. One said, "I was preparing to do a lot of research this summer, but suddenly this famous American professor sent me everything— from a postdoc to equipment—and told me to conduct experiments, gather this much data and send the results back to her. So I ended up canceling all my research plans, and spent tons of time on the project so that the American postdocs can go home with the complete data." Later, as I became older, the number of foreign professors wanting to research on Japanese language increased. One person said to me, "I want to do this kind of research on Japanese targeting adults. Reiko, can I come to your lab and do it?" But I said, "No. My test subjects here are babies. There are no university students in my lab." So she asked me to introduce someone else to her. I thought about it and one person came to mind who I could recommend. So I introduced this acquaintance, a university professor, to

her. But the foreign professor required a lot of data. In fact, it was so much data that it would've taken her two years to gather in the States, but she asked the Japanese professor to do it in just one summer! So, this ended up being a major inconvenience for the Japanese professor. I didn't know that would happen, and I apologized so much. For some reason, the American professor who made the request thought it would be an easy task in Japan, as there would have been no constraints like at her university. There, it would have taken time to go through the ethical review and there would have been more constraints. The Japanese professor on the receiving end couldn't say no because I was the go-between. I was extremely sorry about that. However, the Japanese professor on the receiving end thought that he shouldn't complain because I (his senior then) had specifically asked him to help. However, he was actually a victim in this situation. After having this experience, now when someone asks me for help, whether for my lab or for a referral, I tell them outright that I won't make any introductions unless they follow certain conditions, which I spell out. I let them know that Japanese professors also work under various constraints and can only do so much. They might be able to *this*, but *that* would be too much. I also say that the Japanese professor will only do so much, so if the foreign students come to Japan, they have to do things themselves. If a foreign researcher says during the planning phase, "I want data from this number of people, but if I am unable to get it before returning home, can the Japanese researcher get the rest of the data for me?"—I get it in writing that the Japanese-side researcher will never fulfill a request like that. If the foreign researcher accepts that, I'll introduce someone to them. That's how I've been handling these situations recently. Certainly not every foreign professor makes unreasonable demands, but if the other side says nothing, they just assume what they asked for can be easily done. The professors who were asked to collect data were victimized, and never wanted to collaborate with people from abroad again. It's true that Japanese people often have a hard time saying "no." I've gradually come to realize that such things are surprisingly common among female researchers in Asia. My Thai colleagues and female researchers from other Asian countries, especially younger women, have been asked by senior researchers from Europe and the U.S. to collaborate on research projects and they accepted because they felt that they couldn't refuse. The fact is, young Asian female researchers have had an especially tough time because of this behavior. This could count as what's called power harassment. I don't think

many people do this intentionally, but there have been many collaborations that resulted in power harassment for those who were forced to collaborate. Since my field is language development, there are many female researchers, and young female researchers who are victimized. It's not only in international joint research. I'm sure there are many places where people struggle because they cannot say "no."

Adachi: Is this partly due to cultural background?

Mazuka: No, I don't think it's just culture.

Adachi: Gender, then?

Mazuka: Basically, when a person in a position of power says he or she wants to conduct joint research with a person in a lower position, it can become very difficult for the weaker one unless the person with power makes extensive efforts to make the joint research equal. For example, if I want to do joint research with a Thai collaborator, I would have to think carefully about the fact that the person doing what they were asked may be having a very hard time even though I personally had no bad intentions. Although we are both women and Asian, there is a power differential involved. If one side is a senior male and the other side is a younger female, the difference is even greater. Also, even if it is women who are close in age, one person has to explain the research because the other has never done that kind of work before. The other person experiences stress due to their weaker position. Now that I'm older, I really have to check that everything is okay. I think about how a request can be quite a burden for the other person, even if I don't intend it and I am not being malicious.

Adachi: So this is a bit different from culture norms, such as being respectful to your elders, and so on.

Mazuka: Yes, it's different. Of course, there are cultural aspects too. For example, Japanese people say that Americans don't really have a culture of seniority, but that is completely false. Even in the U.S., there are firm unspoken rules about what not to say or do, such as what seniors may say but juniors cannot. Although it is not an example related to research,

I have been asked rather rude questions by relatively young Japanese women whom I have just met, just because we are both Japanese women. That's the thing that Japanese women living in the U.S. hate the most. Questions like, "Professor, how did you find your husband?" That younger woman would never ask a professor that in Japan, especially if the two have just met. It might have been okay if we were close, and it came up during the natural flow of conversation. But they think that kind of thing is accepted in the U.S. for some reason. Many others have experienced the same thing, not just me. I'm not saying there are no men who makes such rude remarks. Women just aren't surprised at being told rude things by Japanese men. We are used to it, unfortunately. It really is a common misunderstanding to think that Americans aren't strict about gender differences or hierarchical relationships. I wonder if they think it's not rude to say whatever is on their mind. It is true that the way Americans treat hierarchical relationships is very different from Japanese people. Using specific words or language or bowing in Japan, for example. But there are clear differences in the U.S. as well. There are body language and non-verbal norms that are very strict and must be followed. Such things can be more demanding in the U.S. as it never comes to the forefront like with words or language or bowing. And I think you are treated more severely in the U.S. than in Japan if you do or say the wrong thing.

Adachi: You were at Duke for about 15 years?

Mazuka: Yes, that's right.

Adachi: And you became a full professor there?

Mazuka: No. At Duke, I was just an associate professor, at a stage before becoming a full professor. And then I came to RIKEN.

Adachi: I see. Can you tell us why you made the decision to come to RIKEN?

Mazuka: I wanted to do research on babies. I've been working on language development for a long time, but without a base in Japan, it's impossible to do research on babies. This was especially true for me, as I was based in the U.S. and only came to Japan occasionally for research. Occasionally, I was able to visit nursery schools or elementary schools during

the summer vacation, and I could collect data. But I couldn't do research on babies. That requires you to be able to consistently recruit babies and their mothers. I think everyone might feel similarly, but when you research language development, you might start working with older children, but gradually you want to research younger and younger children. There's a limit to what can be studied about language development in children older than the age of three. Gradually you'll want to research younger children and babies. I was thinking about this, and I heard that the Brain Center, which was the RIKEN Brain Science Institute (BSI) at the time, had established a field called "Nurturing the Brain" and there was an open call for PIs there. This is unrelated, but while I was at Duke, I was helping supervise a master's thesis for a student at Waseda University. He happened to be working part-time at BSI, and he sent me details about a job there. He told me, "I'm not sure if you're interested, but there's a position available here." My background was really in humanities, so when I heard the name RIKEN, I thought it was the seaweed company! (laughter) I quickly looked up some info and contacted the person in charge. They told me I should definitely apply, so I submitted an application. A lot happened in-between, but eventually I was hired and now I'm here. Although I had been researching language development for about 15 years, I only started researching babies after I came to RIKEN. That's why I am still about mid-level in the field.

Adachi: There are probably some big differences between looking after students at an American university, and setting up a laboratory at RIKEN.

Mazuka: Yes, it's different. That's for sure. First of all, I don't have to teach classes! (laughter) My husband is American, and a professor at North Carolina State University, near Duke. In the U.S., the number of classes you have to teach varies from university to university, same as Japan. At Duke, I was lucky, as my teaching load was light compared with my husband's. Even so, when teaching a class of 100 students three times a week or conducting a seminar for graduate students, I would have to cut back on either research or sleep. After I came to RIKEN, I didn't have to teach classes, so I felt like I already made it to heaven!

Adachi: What kind of management style were you looking to employ at your research lab?

Mazuka: Well, I had no idea about that at first. Currently, there is a Japanese Society of Baby Science, and the number of psychology professors researching babies is increasing. However, there are still very few people who specialize in this field. Laboratories that conduct research related to babies are very rare. What kind of people should I hire, and how do I motivate them? I really had no idea what to expect. I just came and gave it a try. (laughter) I was thinking that if it didn't work out, I could just quit and go back to the U.S.

Adachi: So, RIKEN was where you hired your first postdoc?

Mazuka: Yes, that's right.

Adachi: Were you paying attention to anything in particular at that time?

Mazuka: I really didn't understand anything at first. I accepted postdocs who wanted to change labs within the Center for Brain Science (CBS), and I also went around recruiting people. There weren't really any students who received their Ph.D.s under professors doing research on babies, looking for jobs. There were probably only two or three people like that in Japan at that time and they already had jobs. I invited people who were interested in the subject, but they came from completely different backgrounds. I trained them so that they could do research on babies. My lab trained everyone on how to do the research. For the first five years, our lab was like a training camp! I sent a person I hired as a technical staff to recruit mothers and babies to Tokyo Gakugei University since there was a professor there doing research with babies. She commuted there for a while and learned how to recruit babies. I asked someone from another lab with experience in EEG (electroencephalography) to visit a professor in the U.S. doing EEG research on babies and stay there for about a month, learn as much as possible, and come back. I was also able to send students to study at another professor's lab who was conducting behavioral experiments. I also had Japanese researchers who were doing similar research come and observe our experiments. So, not only me, but all the staff in the lab were basically learning from scratch.

Adachi: You must have gone through quite a bit of hardship before the lab was able to run smoothly.

Mazuka: Yes. It took about five years. During that time, the CBS had a rather generous budget compared to now—it was a lucky time. Dr. Masao Ito, Dr. Shunichi Amari, and others were there. When I came, Dr. Amari was the director of the Center, and he was very generous. For the first five years or so, we did not see any significant results, but he was always encouraging us to do our best. Under the current system, I might have been told that I had to achieve a specific level of performance within seven years of my arrival to get a permanent appointment. I would not have been able to do it. Once a base had been established, there was a lot of work to be done. We published many papers after that. There were people who came to us after having read our papers. We've been able to conduct a great deal of joint research with foreign countries in the field of baby research, and it's been going well. We're still here today because for the first five years, we had a Center Director and staff members who constantly supported us.

Adachi: It was probably very difficult for lab members getting through those first five years before they could publish their work in academic papers.

Mazuka: I agree. There are quite a few people who quit before they were able to publish their work in international journals. At first, I didn't know much about the systems in place at RIKEN CBS. After all, I come from the humanities. CBS does natural science. The type of research we do would not be published in Nature or other natural science oriented journals, but we're required to submit papers to so-called "top-tier" journals in English. If you're a psychologist like me and you're at a graduate school abroad, that's standard, so I can deal with it. If you've studied in the literature department at a Japanese university, your advisor will have written books and papers for Japanese journals, but probably not many papers in English. Those coming from similar environments don't have any clue where to begin when they are suddenly asked to write a paper in English. On the other hand, there are people who moved from a different lab at CBS where they're used to conducting experiments on mice, and they suddenly have to adjust to human subjects. So just about everyone has

their own difficulty understanding things and learning how to adjust to these new situations. There were several graduate students, same as the Duke students, who found out that the work was not what they had expected and ended up moving on to other labs. Then there were those who stuck with it until they were able to publish papers. So it's more a matter of whether or not someone is suited for our particular kind of work. I was able to launch the lab thanks to the people who came to us at the start. I am grateful to all of them, of course. It was difficult for me, too. I didn't promise anyone we'd publish a certain number of papers. (bitter laugh) Nope.

Adachi: I see. So it was quite hard to predict what the future might hold.

Mazuka: Right. It was.

Adachi: How did you encourage lab members then? Motivate them?

Mazuka: It depends on the person. Many of our lab members do their best without any encouragement. If you have a few people like that, the others will look at them and recognize that they also have to work hard. And after a few years, if someone who's having a tough time continues to find it hard, then they would think about moving elsewhere. Some people, for better or worse, find a job at a corporate research institute and simply enjoy working there. Not everyone has to be a PI at a university or a research institute. I think that's fine. Everyone is different.

Adachi: So after getting through the first five years, things began to go smoothly?

Mazuka: Yes. The second five-year term went rather smoothly. The CBS system changed when Dr. Susumu Tonegawa took charge and created the senior team leader system. I happened to pass the senior team leader review. Until then, my main job was at Duke, and Duke paid my salary. Because of my position at RIKEN, I was allowed to run the lab as a part-time PI. I was taking advantage of Duke sabbaticals and leaves. I was in Japan about half of the time. However, when they made me a senior team leader, I stopped receiving a salary from Duke. At Duke, I received a position as a research professor, which meant that I could conduct research activities even though I didn't receive salary, and that's how RIKEN

became the main site of my activities. I have been doing it that way since around 2013. I am basically a RIKEN person, but I still have that appointment at Duke. That's the position I'm in.

Adachi: Have there been any changes after you became senior team leader?

Mazuka: I can only speak from my perspective. Before I became a senior team leader, I needed to teach classes at Duke at least one semester a year. So I was gone for about six months. I had to run the lab during that time, so it was quite a challenge. But once I became a senior team leader, I no longer needed to do that. It was so much easier to work in an atmosphere where I could relax and focus solely on my job at RIKEN. Before, it was day by day, and I'd sometimes wonder how I'd ever get through the month. It was maybe like being a mother with small children, something like that. Things calmed down and I was able to do a variety of work. For example, I always wanted to do a large longitudinal study, but had never got around to it. I wanted to do a study that would follow babies for a number of years on a large scale and see how they changed. I wanted to do it, but felt that it wouldn't make any sense if the lab might be gone in another five years or so. I launched that project as soon as I became a senior team leader. (laughter) It took us around five years until we could finish collecting the data.

We are in now the process of analyzing the data we've collected. We have an enormous amount of data. We had about 700 pairs of mothers and babies come in starting when the babies were 5 months old. And then we followed them at 8 months, 10 months, 18 months, and 20 months. At 20 months, we look at their vocabulary as they started speaking. This kind of longitudinal follow-up study, considering kind of changes occur along the way, is called a cohort study. This kind of longitudinal research was not something that could be done until I became a senior team leader. For now, I'm researching without worrying about getting fired. (laughter)

Adachi: Did the number of lab members increase from that?

Mazuka: No, not really. There's the budget to consider. When I arrived at RIKEN, the budget was very generous compared to now. We were able to do a lot of things with just our internal

budget, without having to obtain external funding. We also had more leeway with the number of staff we hired. But gradually, the budget we received from internal funds began to decrease, and we were asked to take external grants as well. In the beginning, given that we were in the humanities, I was probably the humanities researcher with the most research funds in Japan! I, a single researcher, was receiving RIKEN internal research funds that were equivalent to the amount for five or seven professors at other universities, without even applying. I felt bad about applying for external grants then. But as the internal budget got smaller and smaller, I couldn't hold back anymore. So, I have decided to start applying for external funding. A while ago, I was able to secure a KAKENHI Scientific Research S grant. By that time, the large cohort study I mentioned earlier was mostly finished, at least the experiment part. The next thing I wanted to do was to conduct joint research involving other Asian countries, not just Japan. Up to that point, I'd done a lot of joint research with PIs from countries such as France, England, and the U.S. who wanted to work with me to collect data in Japanese. That was fun. But I realized it was hard to be convincing if I was the only one working on Asian language. Researchers from other Asian countries wanted to collaborate, so we established the KAKENHI Scientific Research (S) project. We've expanded on this and obtained another KAKENHI grant for Specially Promoted Research (Tokusui). Currently, we're working on a joint research project comparing Asian countries with the West. Once I came to RIKEN and decided to settle down here for research, the scope of what I could do and what I want to do has changed. Early on, I had some projects I had to give up as I had no means to get them done. I think things have changed quite a bit since I became a senior team leader. I no longer feel bad about applying for external grants, and getting it for my research.

Adachi: So that's why there hasn't been a large increase in the number of people working at the lab.

Mazuka: Right, there has been no increase.

Adachi: Has the number of collaborating researchers been increasing steadily?

Mazuka: Yes. Since the specially promoted research is a joint research project between six countries, the labs of each joint research partner have hired people to work on the project using the KAKENHI grant money. So the number of people has increased. No one is starting from scratch though, we've gathered people who have done some form of joint research in the past.

Adachi: Six countries means quite a variety of cultures, with unique differences.

Mazuka: Right. The purpose of this project is to compare cultures. The social relationship between mother and child is involved in a baby's acquisition of language. The way mothers communicate with their children, for example, is very different in the West than in Asia. We want to study what kind of effect this has on baby's' speech and vocabulary development. There have been a number of studies that compared, say, Japan and Canada, or China and the US. But it is not clear if we can generalize the results of these one-on-one comparison studies to Asia versus West. Our goals for the Specially Promoted Research grant project is to study a multiple languages from Asia and the West to compare them as a whole. Unfortunately, the COVID-19 pandemic occurred, and things are not moving as smoothly as we'd like.

Adachi: I was surprised to learn that the research itself is affected by different cultural backgrounds. Are there differences among the six countries in the project itself or in the style of the joint research?

Mazuka: Since all my collaborators have degrees from North America or Europe, I can basically carry out our research in English and in the American style. There isn't a single person in the group who hasn't been abroad. If I wanted to work with people who had only ever been in Korea, maybe that would have been difficult. The head of the lab in Korea is a former student of mine. The research and experimental criteria and standards of my fellow researchers mostly conform to American standards.

Adachi: Everything goes relatively smoothly then?

Mazuka: No, of course a lot of issues come up. It's complicated, and we all have our own sources of stress. But I'm very fortunate to have a group of like-minded collaborators, each of whom are top-level in their respective countries.

Adachi: It's interesting how even though things seem to be going well, there's still stress. Can you share about that stress?

Mazuka: It's like everything else in life. Suppose you're developing products at a company. There are still deadlines to be met, and it's stressful to finish a product by a certain date. But it's interesting because you can rise to the challenge. If there wasn't stress at all, we wouldn't be able to do any work. Stress comes hand in hand with work. You could call it good stress. If I want to do something, there are associated birth pains. It might be stressful, but not that painful. It's not bad stress. In the end, I am the PI for the project, and my grant money pays for this project (although it is the Japanese government that is actually paying for it). So, I have the final say as to whether something is good or bad. You could say that the stress I experience on this project is less than what other people experience.
My collaborators in the West each have their own grants, and several of them have bigger grants than mine. So it's not about the amount of money we have. I happen to be the one who wants to do this project, so I pay the necessary funds for it. On the other hand, there are times when my collaborators want to do a project, so we collect data for them. That's what our collaborations are like. With all that said, a certain amount of stress really can't be avoided.

Adachi: What moments do you find most enjoyable or rewarding as a PI?

Mazuka: There are a many things. I studied syntax when I was younger, which is related to acquiring the grammar of a language. Little by little, I began thinking that researching babies would be interesting. I presented and talked about this idea of mine at an academic conference hosted by Stanford University. Professor Jusczyk, who was the keynote speaker of the conference, expressed interest. He liked my idea, and recommended the symposium hosts invite me to present at Brown University the following year. Professors specializing in baby and child language development from around the world were invited to that

symposium. Many of them approached me to say my presentation was interesting. It made me really happy. From then on, I started being approached by professors who were doing significant research on babies.

That symposium was what brought me to RIKEN. When RIKEN BSI had an open call for the field of "Nurturing the Brain," I thought it would be worth applying, but I couldn't make up my mind. Around that time, I attended a conference in the U.S. and met up with Professor Janet Werker, someone I met at the Brown conference, and who is one of leading scholars on baby research. So, I asked her what she thought. We were attending a talk by another professor, whispering in the back row of the hall. She told me I should definitely apply for the position, and grabbed my hand on the spot. (laughter) The professor who was giving the talk, Dr. Jacques Mehler, is a creator of an important journal called Cognition. I got to know him also at that symposium at Brown University. Dr. Werker dragged me by the hand to Dr. Mehler when he had finished his talk, and said to him, "Jacques, Reiko wants to apply to RIKEN. Let's write letters of recommendation for her together!" I later found out that Dr. Janet Werker was a member on the advisory board at RIKEN BSI at the time. Dr. Takao Hensch who was at BSI at the time and was working on the neural mechanism of critical period. Since his interest in the critical period originated from language acquisition, Dr. Hensch was involved in asking Janet Werker to join the board. I had no idea about all this. I just talked to Janet about the BSI position, and she said, "You should definitely apply!" She said, "Jacques knows you too. Let's ask him to write a letter of recommendation." So right then and there, I had two people who were going to recommend me. I later learned that those letters from Dr. Janet Werker and Dr. Jacques Mehler contributed significantly to my successful application to RIKEN. That's what I heard, at least. (laughter) So the symposium at Brown University—the one I had been invited to—was what ultimately determined the theme of my later research.

This was a complete shift: from how children learn grammar to speech development in babies. Theoretically of course, these topics are related, but the particulars are quite different. Overall, that talk at Brown, you could say, was a turning point in my career. There are many people who have told me, "I've wanted to talk to you since hearing your talk at Brown." It was truly a turning point for me. I must also thank my advisor during my Ph.D. program at Cornell University, Dr. Barbara Lust, who accepted me as a graduate student

even though I had been a bad undergraduate student with poor grades. She mentored me, so meeting her was really step one for me. Step two was meeting Dr. Jusczyk and Dr. Werker. Through them, Dr. Amari and Mr. Hensch pulled me over to RIKEN. I guess that was step three. Thinking about it now, I feel incredibly lucky. (laughter)

Adachi: How did you get to know those professors from step two?

Mazuka : It was at that Brown University conference when I began speaking personally with Dr. Janet Werker and Dr. Jacques Mehler. Prior to that, I met Dr. Peter Jusczyk at a conference at Stanford University. I presented my theoretical paper there, and Dr. Peter Jusczyk happened to be the keynote speaker there. He said he had listened to my talk and it interested him. He asked if I would like to collaborate with him. After that, I would go and talk with him from time to time, even though he was at University at Buffalo (the State University of New York) then, and Johns Hopkins later. I was in the U.S. at Duke, so it wasn't easy to conduct experiments with Japanese babies. But Dr. Jusczyk suggested that even if I couldn't experiment with Japanese babies, I could try Japanese stimuli on babies in the U.S. at his lab. So I conducted several experiments.

When that conference was organized at Brown University, Dr. Jusczyk was invited because of his research, but he also asked the professors at Brown to invite me because I was doing some interesting things. There seemed to be a number of important researchers in the field there, and many professors were in the audience for my talk. Other than Dr. Jusczyk, Dr. Jacques Mehler and Dr. Janet Werker were also interested in my work, and invited me to their labs afterwards. I spent three months in the summer at Dr. Mehler's lab in France. That's how I was getting to know them, and the RIKEN opening happened to occur around the same time. It wasn't that I didn't know about RIKEN of course, but that's the story of how I became part of RIKEN. It was an unusual course of events.

Adachi: What has been your least enjoyable experience as a PI?

Mazuka: As a PI, so you mean my experience after I came to RIKEN? I guess it would have something to do with the organizational structure here. Fellow PIs, including me, have gradually gotten more and more tired. You know what I mean? There have been various

systemic changes in non-research areas which bring about new things to adapt to and decreased budgets. Many things were changing, little by little. Maybe these changes were necessary in the long run, but the PIs were getting fatigued trying to keep up. Many PIs spent a lot of time in committee meetings and writing up documents. When my colleagues and I went out to eat during our private time, it always turned into a complaint session. It wasn't like that before. We had fun things to talk about, like conferences we recently attended, or other interesting going-ons. Our budgets had certainly become tighter and tighter, so we talked about how we had to get more money flowing from RIKEN to the BSI. How we had to do this and that to accomplish our goals. It was probably inevitable, but the more time we devoted to things other than research, the less time we had to talk about good things. As the other stuff built up, our time for research diminished. There was a time when we were all stressed out, like there was nothing fun to do or talk about.

Adachi: How were you able to get through those not-so-fun times?

Mazuka: I survived by meeting up with good friends and complaining about it. (laughter) Going to the hot springs, eating good food, that kind of thing. It's probably the same for everyone.

Adachi: What about the other members of the lab?

Mazuka: Those kinds of issues weren't really relevant to them. Like discussions about next year's budget strategies at PI meetings. Sharing too much with the lab members about that stuff will only stress them out. Still, I don't keep many secrets from them. For example, I told them that this year I'm up for my senior team leader review, and I don't know if I will pass or not. If I don't pass, the lab will have to close in about two years. If that happens, they will have to worry about what happens next in their career. I also told them that next year's budget will be really tight because of the way things are. I try to be as open as possible about these things with my lab members. But I don't talk too much about other stuff, like how this professor and that professor don't get along. (laughter) At any rate, we PIs survive by venting to each other.

Adachi: Thank you very much. That's all my questions. Ms. Matsuo, if you have anything, please go ahead.

Matsuo: Dr. Mazuka, what is the difference between aiming to become a PI versus becoming a researcher?

Mazuka: There's really not much difference between the two I guess. I have never been a non-PI researcher. I became a tenure-track assistant professor right out of grad school, so I was already a PI from that point on. I've never done a postdoctoral fellowship. I did have to serve as a research assistant (RA) for a professor's grant when I was a student. I've never worked as a postdoc, so I'm not sure. I think young researchers today have a different experience, but back then, there was no concept of a postdoctoral fellowship in a field like ours.

Matsuo: Thank you very much.

Adachi: Can you tell us about your work–life balance? How do you maintain both your work and private life?

Mazuka: When I'm constantly working, I work from morning till night. When it starts to get to me, there are times when I don't even want to look at work-related emails. You might say that those times are the times when I'm not maintaining a good work-life balance. (laughter) I've been that way since I was assigned summer homework in first grade of elementary school. I don't get going until the deadline is looming in front of me. Then I scream and cry when the deadline comes, sacrifice meals and sleep, and am totally worked up. But once it's done, I forget all about it, cheer up, and keep going until the panic of the next deadline comes. Overall, I think I have the same kind of work-life balance as just about everyone else. A lot depends on the period we are talking about—it's not always the same. But I don't have any children. That might be why I've been able to manage things this way. When I look at people raising children, things don't work like that. They really have to finish everything that needs to be done during that day. I'm sure that I would do the same in that situation. Whether it's good or not, I haven't been in that situation, so I'm still thinking about it like summer homework in elementary school, crying and revising papers

at 2 a.m. before the deadline. (laughter) Like, if I don't submit this by tomorrow, it won't be on time for the peer review.

Adachi: How is the work–life balance for lab members?

Mazuka: I think maybe our lab members are much more balanced than I am, relatively speaking. RIKEN has budget to support those who are taking maternity or paternity leave. The number of applicants for these internal support grants have overwhelmingly been from our lab. (laughter) I should get a reward from the government department that deals with the declining birthrate or something. So many people from our lab have applied for those internal grants! We conduct experiments with babies, so when someone experiences raising a child and returns to the lab, it feels like they've matured. They see things differently after having had their own experiences with their babies. So if someone has any experience raising children, they are more than welcome! Our staff are willing to go ahead and have another child too if they want to, due to the supportive atmosphere. Everyone goes home at around 5 p.m. I'm always the last one to close up the lab and go home. (laughter) But instead of resting at home, I'm sure they are very busy raising their children, preparing meals, picking up the children from daycare, and so on. I'm sure everyone's busy with those tasks. They have personal lives outside of work and protect that, so I think they have relatively good work-life balance. At CBS, there are many labs where the lights are on until late at night and the PIs are in there with their postdocs. For us, we have no babies scheduled for evening experiments, and our members have their own children at home, so everyone more or less just goes home in the evening. But I wonder if I'm just saying that.

Adachi: Is this your management style—showing them that, as a PI, this is the kind of atmosphere you should value?

Mazuka: I think so. People who don't like children or who are bothered by the babbling and crying of children cannot survive in our lab. We tend to have staff members who are good with children from the start or, or those who aren't so good at first, but gradually get better. There was a very talented researcher who was single when he came to our lab. He conducted research to measure infants' brain activation using NIRS (near-infrared

spectroscopy). But whenever he showed up for an experiment, the baby would cry. After a while, other staff would tell him to leave the room. After getting married and having a child, he took a short break and returned to work full-time. And then, everyone said, "Wow, the babies don't cry around you anymore!" Some members said, "Maybe he has some kind of smell on him, like baby clothes or milk or something." I'm not sure if the smell was the thing. I think it was more like after having a child himself he was gentler and more patient with our test babies. So he wasn't so good at working with the babies at first, but after becoming a parent himself, he got better at it. There are people like that too.

Adachi: Finally, Dr. Mazuka, could you share your policy for running the lab as a PI, or give us some idea about how you do things?

Mazuka: Since I am the PI, the overall theme research will be based on what I want to investigate. But the actual research is carried out in collaboration with the lab members. So, we need to come up with projects that would take advantage of individual researchers' strengths and interests. I think that may be a minimum requirement for lab management. However, it is not always easy to balance what each researcher wants to prioritize, and what needs to be done for the lab. In many cases, my opinion end up getting the priority. But I am making a conscious effort not to make everyone do the same thing, but rather assign people to what they're best at doing. That's always on my mind. But whether or not things are actually going that way is another question.

Adachi: Thank you very much for your time today.

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