

BELGIAN STATISTICIANS

with Herman Callaert



Could you tell us a bit about your school education and in particular who and what aroused your interest in Mathematics.

If we start a long time ago, I was quite good in mathematics in secondary education and had a good teacher there. So, he motivated me, I went to the University of Leuven and took mathematics.

How many students were you at that time ?

There was quite a lot but we were together with physicists and for their courses sometimes also with engineers. But even if we take apart just mathematics, I guess we were like more than 100. It has changed a lot now. There is a decline everywhere in mathematics and sciences, so people don't like it anymore.

What or who oriented you from mathematics to statistics because you made your master thesis in astronomy?

I made my master thesis in astronomy because there was an excellent professor there and I wanted to work with computers. It was the very first computer at the university and I could work on that computer for doing some of my calculations in astronomy (orbites,...). After mathematics, I wanted to go and teach in secondary school. So, I applied in the school I came from and got the job. But soon after, I had the opportunity to become an assistant in Leuven in the Department of Mathematics. But, it really was a coincidence that, the same month, Jozef Teugels was returning from the States. He had just got his PhD there in statistics and he was essentially the first young statistics professor coming back to Leuven. He needed an assistant ...and it is unexpected but anyway... I enjoyed working with him and in those days it was still very theoretical mathematical statistics what

we did because we were mathematicians. So, I started doing statistics in a very abstract mathematical way and I had not seen a dataset.

Can you tell us about your PhD thesis in Leuven ?

As I told you, and you will not believe it anymore, in those days we almost worked without data and applications, so it was quite theoretical. My PhD was about the convergence to stability in birth and death processes. It started with birth and death parameters and I studied the rate of convergence to stability. It was essentially pure mathematics. I got involved in random variables and stochastic processes and in that new world in the same time, it was very nice.

When and how did you land in Diepenbeek?

When I finished my PhD in Leuven, I immediately went for one year to the United States at the University of Rochester. I got the opportunity for teaching and doing research there, not in the Department of Mathematics but in the Department of Statistics. So, I discovered the all broad world of statistics. That was the start of my passion. When I came back, I was lecturer in Leuven during a couple of years. Then, there were vacancies for docent (starting professorship). There was a vacancy in Leuven and at the same time there was a vacancy here in Diepenbeek. It was just a starting university (it was the first or the second year it existed). I still remember very clearly... At the beginning of July, the same week, I got 2 letters: a letter from Leuven that I got the appointment and a letter from Diepenbeek that I got the appointment, and then I had to choose. Leuven was safe and big and interesting but also traditional, bit old. By contrast, in Diepenbeek, it was just a start. That meant doing all yourself but you had much more freedom to do what you want to do, to build something new so if you're successful, it's an extra opportunity that you were at the start but it was also a risk ... I did it...

Can you tell us about the motivation for initiating a Master in Biostatistics there?

We first started here in Diepenbeek with a very small group. I was the professor, Noel Veraverbeke was the senior assistant and Paul Janssen was a junior assistant starting his PhD. We have worked several years with such a small group, mainly still in Mathematical Statistics. Then I got in contact with people from the States in Harvard and Stanford. In 1983, I went for another stay to Stanford University and there again I saw all those nice statistics and more and more also the biostatistics part. I got involved also in the hospital there and I was quite fascinated. At the same times Stephen

Lagakos (from Harvard) had good contact here in Belgium with pharmaceutical companies. He told me those companies were looking for biostatisticians and there were none in Belgium. They had to go to the UK to find biostatisticians to come and work in Brussels and then I thought this could be nice. Biostatistician was not a profession yet in Belgium and again we took a risk because we said: here it's a small university, we are a small group, we can not go for statistics in a broad sense, let pick something very specific, do the very best there. So we started in biostatistics with the help of Harvard, with the help of David Cox, the first people I contacted for setting up a program for starting things. The rector approved our initiative, certainly also because I could say that what we are doing is recognized in Harvard. That is the way it started. The more we got involved, the more I got to know about biostatistics. You have to realize Biostatistics is a broad world and I never had heard about clinical trials before! That's why we had to hire a lot of visiting professors who were big experts in clinical trials like Marc Buyse and Richard Sylvester and people like that... This was good because all students got the best you can give them. For 15 years, I got every year a professor from Harvard teaching here. That was the start, all again a kind of coincidences. Immediately we had students from Liège, Namur, Ghent, Antwerp, all those students came and also took the risk for a first year. I remember some students telling me: you are working very hard here, at the end you are giving us a diploma and we don't know whether with that diploma we will have a job because we do not know what is a biostatistician in Belgium. They also took the risk but they all found a job, even more than one they could choose.

How many students attended the master during the first years and now ?

We had, I guess, almost 15 students per year in the first couple of years. We started mainly from Belgium but we had immediately students from the Netherlands, Germany and then from Prague where we had contacts. In a couple of years, it was quite international but not like it's now because we have that extra ICP program also for developing countries and so on... Now we have like 50 or more students per year. The majority now are not coming from Belgium. They come from other places in Europe and also Africa, Asia and Latin America. It must be a rumor all over the place that this must be a good program after all and they come to Diepenbeek.

Can you tell us about your trip abroad?

The first time I went abroad was immediately after my PhD. I was just married and with my wife we went to Rochester for a whole year. It was a big experience also culturally. It was not just that people spoke English but

also the mentality and the real life were so different. Of course, like Americans, it was work, work, work, work during nights and weekends and evenings. My professor was Julian Keilson and there should be publications every couple of months but I also had to teach in the same time. There, I learned a lot because I had contact with many other professors in Statistics and I really learned a new world because I was there a whole year. I experienced everything... if you go for a short period, you are visitor and people do something extra for you and then you can go back home but if you are there for a year, you are just like them. You really see how it works in another place and that was quite nice. Then, 10 years later, in 1983, I got a full grant for going half year to Stanford University which is completely the other side of the States... In the first place (Rochester), we had a huge winter with large amounts of snow and in California nice sun. It was also different because at those days I had 3 young children. The older was in 5th year of primary school, the second in 2nd year primary school and one was in kindergarten. We went for half year with the children and they had to go to school there. When we left Belgium, they cried because they had to leave their friends and had to go to school in the US there but they didn't speak any English. However, after couple of weeks they spook English with their friends, they played together and when we came back from the US, they cried again leaving their friends there... When I was in Stanford, I did not have to teach, it was a research grant. That means I could take seminars from the big heads Efron, Stein, ... It was a very nice place. Again, I saw there what you have to do to really work in Biostatistics and also completely other ways of work, of thinking and of setting up experiments. It was again a rich and good experience. Of course if you are there you bring that back when you are here again and you have friends there. If you need to know something, you know them personally, you just can write an e-mail or make a call, it makes you work much more easier at an international level. That is the nice thing we also are able to do here in the small university: the Biostatistics program is not a little small program. It's a program that you can show to the world. So it can stand to any other comparison and I am very happy that we realized that. Of course that needed good friends who were much more clever than I am....

In your career, you met quite a number of famous statisticians and mathematicians. Is there anybody particular that you like to mention in terms of influence and/or friendship ?

There are many and of course they all had their own influence... Even if it is not so directly, by meeting them, by talking to them, by seeing all day work, what they do, it influences what you are. It's a long list. I didn't want to give specific names but of course, by setting the Biostatistics program, I had several contacts and many long discussions with David Cox for

example. I cannot say we are close friends, but we know each other well ... and whatever I want to know I can ask him, I can have his advices and so on...that's a big influence....and then of course the people from Harvard like Stephen Lagakos, I started with ... he is a very good friend. He came several times to us even with his children. They played with my children in my garden in Diepenbeek. That is another kind of relationship we have as family together. In a similar fashion I could mention Louise Ryan or Dave Harrington, just to name a few...Many of them have been in Diepenbeek for at least one month. We invited them during the week-ends, sitting in the garden, have a barbecue, go for a walk.

So, you had time during the week-ends for barbecues?

Yes, but when I went to the States for the first time I was happy that I had my wife because it was hard-work also during the week-ends. So, on Saturday, my professor Julian Keilson called me: "I am working here in my office, where are you?" Fortunately, it was my wife who took the phone and she said: "we are used during the week-end not to come to the university". I would not have dared to say it. Nevertheless more than half of the week-ends I had to work there but then my wife prepared for short week-end trips (one or two days) in the neighbourhood. So, we had learned to visit a little bit instead of always work. I have a nice thing that David Cox once told me, and he was right in a certain sense. I was saying: "the Americans are working very hard" and he said "No, there are very busy".

In your own statistical contributions, is there one you view as quite important ?

That is difficult to say because you can not compare apples with pears. I started in a very mathematical statistical world and there we have done good things with Noel and others. So, we had publications in the annals and it was not just one good luck no... a second, a third publication... That's one thing and our group still is good in mathematical statistics. When I started with the Biostatistics things, I had less time for working in mathematics and I got interested in other things. I did also some consulting work and so on and I got more and more involved in that world. Now, for 7-8 years, I got more involved in statistics education (also for secondary schools) but also at a theoretical level. I go to international conferences where you have statisticians and educational psychologists, etc... We are doing good things there and there are also international journals in that field. We are almost reseeding the statistics education in secondary schools in Flanders. We are writing new textbooks for the teachers and we are diminishing the amount of computations and formulas. We are writing more about experiments or observational studies. I had a couple of grants and I have, on a partial basis

(10%), 4 teachers who are teaching in schools working together with me. I think that if students start to appreciate statistics already in the secondary school, it might be that they also do so in higher education and that they get more involved but anyway that is another of my dreams ...

There are statistics in all the fields...not only in statistics or in mathematics...

Right...I think that also those courses need a bit reshaping but who am I to say that. Certainly what I see up to now, at least for the Flanders part, is that statistics in secondary education is like a couple of formulas, a couple of definitions and examples. The big ideas are not there. So, you can compute the mean, drawn a histogram but what do you do with a histogram? How do you discover the information in a dataset? Now we are busy to rewrite the whole thing and give it to teachers because if you are only giving the content that's not enough. Those people don't have time to rewrite things, you really have to write a textbook almost ready.

Can we talk a little about the courses you have been teaching over the years ?

The courses I gave the most were courses about statistics but I taught linear programming in the States. In Diepenbeek, you had to teach a lot of applied mathematics (mainly calculus) courses for biologists, chemistry, physics, people in medicine, dentists,... We had to do that because the number of courses you teach makes how many assistants and how many professors you can have in your group. Now, there are more courses in statistics but in those days there was almost no course in statistics. It was applied mathematics. So, I taught a lot of that applied mathematics things and then a couple of statistics courses at the level of first or second bachelor and of course the courses I was involved in biostatistics and in applied statistics. From those courses I learned a lot. One thing I often say to people at the University: "when you really want to understand something very deeply, teach it".

What are your best and worst souvenirs during your long career?

Well, to be honest I don't have many really bad souvenirs... I am quite happy that I can look back at nice periods, of course with ups and downs as every normal day life. The best thing in general I had is that I have been able to work in a group of people where we understood each other. We gave each other a lot of freedom but also we worked together if needed. If you have that opportunity, you can go every day in peace to your work. I also have a lot of good feelings about the students ... of course you can say I have big

publications but I see other things also. We are together to work on the master program and I am sure that we have changed the life of many people fundamentally. We have given them the opportunity to enter a new world, to start a new job, a new career they would otherwise never have had. I see that most of them are very happy with that. You have done something that lives further in other people... this is nice.

Do you remember one particular student or the history of one particular student?

Ho, yes, I have 100 stories...I will tell you one story. Krista Lapp, a student coming from Estonia. On one Sunday night, somewhere in September, it was already dark, I got a telephone call at home: "Your student from Estonia is here, I am standing at the railway station of Diepenbeek". So, she had come all by herself, knew the university was in Diepenbeek and took the train to Diepenbeek. There is no railway station in Diepenbeek, it's open air. She went with a backpack to the nearby café and had my telephone number. So, I jumped in my car, drove to that café, picked her there up and said: "Come, you can sleep at home tonight and tomorrow we will see what happens." Now, in the mean time, she studied here, she continued, worked with Els Goetghebeur in Ghent, made a PhD and now she is professor in Biostatistics in Estonia.

Is there a message you want to deliver to the BSS members ?

Well, a message is always so important and things like that...I would say keep doing what you do. Make sure that you are working at a right professional level, and try to enjoy it... that's it

Thank you for sharing a few moments with me. You are the first of a hopefully long list of interviewed Belgian Statisticians!