Interview with the professor Cristopher Fennell

Cristopher Fennell is full professor at the school of Psychology and the department of Lingüístics (University of Ottawa).
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(1) Christopher Fennell from University of Ottawa. You're full professor, both at the school of Psychology and the department of linguistics. Your topic is bilingualism. This conversation is going to focuse around this topic. To start with, could you briefly summarize your trajectory in the research, in this domain of research?

I can start why I got into this domain and then talk about my trajectory. I grew up in a bilingual area, similar to where we are right now, where there are two languages present. In my home province there are two languages present, so I always was interested in bilingualism because it is a cultural value where I grew up. When I started university, I wanted to see what I could do with that interest. First, I thought I was going to be a teacher, I thought I was going to teach languages. And when I started to figure out how people learn languages, why would I deal with people this age when I could go all the way down and figure out how they learn languages from the very beginning? And so that's how I ended up in grad school. I started grad school doing bilingual infant language acquisition. And I started doing phonetic, phonological research and I was really interested in how kids use sounds in words. So you start learning words, how much sound detail can you pack into that word? Is it much more global and fuzzy? So that it's not that you know cat, 'c-a-t', but it may just be that you know there is a consonant, a vowel, another different type of consonant or do you actually have from the very beginning "c – a – t", all of it? And when you get to bilinguals, it gets very interesting because now you're going to have to learn "cat" and "gato" and you have to learn two of these things now or in French, "cat" and "chat" and so you have to learn two different consonants and two different vowels. That's what really excited me and so I stayed in that sort of area for a while. Then I started to get a little bit more interested in other aspects of bilingual language acquisition. Lately I've been working a lot on word segmentation with a former graduate student, (student's name), who is done a lot of that research as part of her thesis. That's how you pick out words from all of these words getting thrown at you. So I'm starting to go beyond word learning and phenology to other aspects.

(2) That's where you are now. It's interesting that you showed these changes in your ideas about the study of bilingualism, can you also tell us something about how the field has evolved in the last 20 year or so, because I think that the perspective has really changed.

I entered graduate school, about 20 years ago, when I started grad school and I was interested in this thing, bilingual language acquisition from birth, there was not much out there, there was your stuff, there was nerdy stuff, there was very little research available because what most people were really interested in was French immersion or English as a second language. Learning a second language when you're 6 7 8 9 years old, we have this entire population in the world, here in bcn, in montreal in Canada, anywhere where there's an immigrant population where these kids are learning these two languages from

birth. Nobody was really looking at that before the 1990s, and then I entered grad school, there were some studies. In the mid 2000 all of a sudden, maybe around 2009 or so, there has been an explosion of research on this population, finally. At the very beginning it was the basic questions because we didn't even know, can they tell the two languages apart, early on? Can they tell two sounds apart? Can they learn words at the same time? We didn't know any of that now those basics have been, not fully answered, but a good chunk of that. We know a lot more, people are looking at a diversity of topics that we did not have 20 years ago because we weren't ready yet because we needed to do the basic research first. So I'm thinking of the research on code switching, in the first two years of life babies who are hearing Spanish and English mixed together and how are they picking apart the two languages when I start a sentence in English and I switch to Spanish half way through the sentence; looking at word segmentation across two languages; looking at mutual exclusivity in a lot more detail. None of that was present 20 years ago. I should explain what mutual exclusivity is. Monolingual kids are not so great at giving two names to one object. If they see an object and they hear a new label, if they already have a name for that object – if they already have the word table – and then you say 'mesa', and they don't know that because they are an English learning kid, they are going to think that's a mesa (he points at something else on the table, not the actual table) because they already have the word for table so that can't be that. So how do bilinguals do that? That's an interesting question because they need to override that all the time. That's mutual exclusivity.

(3) I think that the field has changed a lot, also some misconceptions about this delay. What is your opinion on this monolingual bilingual comparison. Is this a delay, is this a problem? I think that's a misconception.

It's a complicated question as well. Language learning is such a powerful force in early childhood, it is such an innate thing in earth. Language is driven not only by biology obviously, but nearly everyone on earth needs to do this, barring any neurological problems. If it's such a powerful force, why would it look much different whether you're learning one language or two? What would be so different? For the basic, I'm of the opinion that it's not 100% overlap, no. But for the basic processes these two groups are not going to look very different. When you get to the more subtle questions of comparing the English vocabulary of a monolingual English child to the English vocabulary of a bilingual child who is only hearing 20% English, yes there are going to be differences but that just makes sense. You can answer this question in a couple different ways that depending on how much they are hearing of the languages that is going to reflect on how much sure they are in that language. So a balanced bilingual is going to look different than a dominant nondominant bilingual. But for the basic processes I believe, based on a lot of research, this is the same across the two populations.

(4) Do you think that monolingual research has benefitted from research in bilingualism? What's the contribution of bilingual studies? How bilingual studies have improved or highlighted aspects of the language learning process in general?

I think bilingual research has made monolingual researchers (I say "monolingual researchers" as an adjective of those researchers that study monolingualism only), has made them realize that they can't just throw this population necessarily in with their own population. That's one aspect I think that's really becoming more to the forefront. And I believe it was Christopher or one of his students who had a paper recently which argued exactly that, that be aware of bilinguals, cause we now know that how they develop and depending on how much they have of each language on the list, you can't just throw them

in with the monolingual population. Monolingual researchers have become more aware of, I have to account for my own population. That it's not just a group or children in which some are Spanish dominant and some are English dominant, and I can't necessarily treat them as the same population. I think that the other thing that bilingual research has given back to monolingual research is that we, as people that examine two languages, become hyper aware of context and how you present stimuli and how they are learning the languages. There were aspects of that in monolingual research as well, the work on socioeconomic status and how much words you're hearing. That is becoming more and more on the forefront on the monolingual side too. If one child is hearing this much English (indica menys amb les mans) and they are a monolingual child and this child is hearing this much English (indica més amb les mans) and they are a monolingual child, they are not going to look the same either, and we know that, because we deal with a bilingual population we had to control for two languages. I don't think monolingual researchers really pay much attention to that and now it's becoming very to the forefront again.

(5) So this is like saying it's variability that is present, no matter whether you are bilingual or monolingual, should be taken into account. What do you think are the factors that are producing this variability? Besides the typical ones, socioeconomical status, amount of exposure, are there other relevant factors that should be explored?

Oh yes, and may be we don't know them all now either. When you're dealing with an infant, a child that is learning two languages and you start to having to think about what we control for, even in my own lab, we can have a go before I left Canada we had a lab meeting and the entire lab meeting was 'how are we going to measure bilingualism in this new lab', we have a new physical lab, in a museum, in Canada. We don't have as much time with participants. So the question was how do we accurately measure bilingual exposure in a short amount of time? So what are the most important questions that we can ask? We spent an hour discussing that and we still don't have an answer, we'll be talking about it when I get back to Canada, we'll have another meeting about that, I'll give them homework, go and find measures. Because its maternal language, literally, the language of the mother, because on average the mothers speak more to their child than the fathers, for cultural, sociological reasons, should we weight that much more or should we weight it just a little bit more, or don't weight it more at all. I don't have a clear answer to that. Whether they hear it from grandmother, grandfather, uncle, aunts. How much do we give to all the family members. The outside, if they are living in an English dominant neighbourhood vs a mixed neighbourhood, in my case English-French neighbourhood, or in a francophone neighbourhood, should we measure that, the pulse took over to where they live. The variability present in bilinguals is massive. I haven't even started on, cause I only deal with one group of bilinguals, a homogenous lovely English-French only. But now in the museum setting we are in, we get English-Spanish, English-Hebrew, French-Arabic.

(6) That's an interesting point because talking about these different pairs of languages it's not only important which are the properties of these languages that the kids are learning, but what would be the most important effects, how these specific pair of languages affects the learning, what would you say about this?

We don't know much, which is great because then there is all of this research we can do. Locally here, Spanish and Catalan, two very similar languages in the grand scheme of things, more similar than English and French even. English and French though, there are still a third of the words that overlap between those two languages. Table and table, it's

the same word. Like cat and chat, they are very similar, these words. So you have that vs French and Arabic, which are two different linguistic families with different ways of constructing a sentence, different ways to construct words even, different plural markers. We don't have any of those answers for the most part of it. How does that affect? It's going to depend on the task too. If we are doing a sound task, of the sounds of languages, Turkish and French have a lot of overlapping vowels, as opposed to Mandarin and French, is that more important? But if we go to grammar French and Turkish look nothing alike, so if we did grammar studies they would look very different. I think it really depends on what you are studying and you have to then compare what those two languages are. And I haven't even started with cultural values. If you teach those two languages in the same way in those two cultures, but that's outside my expertise.

(7) A question that is also of interest is, talking about the methods for instance, not only about the languages, the properties of the languages, depending on which domain of the languages you're interested in, let's say phonetics, phonology, versus lexical information or lexical word learning or even grammar, but what about methodologies, have the methodologies changed? What's going to happen in the next few years in terms of research lines and methods used to better explore bilingual but also monolingual language acquisition?

I think what we are seeing now and we are leading back to what I said earlier, going from 20 years ago when there were only 20-30 studies on infant bilinguals, to now when, the last count I had was over 200 at least on just infant bilinguals. What that means is that we now have a diversification of methods that we didn't necessarily have – people were still using different kinds of methods a while ago - but now we see people working with ERP, people working with eye-trackers, people working with just prefrontal looking, which object do you look at when you hear the correct label. All of these different methods are in play in bilingual infant language acquisition but they are also completely in play in monolingual infant language acquisition, in some ways is that the bilingual literature has caught up to the monolingual literature in that since we have a diverse amount of researchers looking at this, which is very important as well, different point of view, that we now see a diverse array of methods, so is there a one method that is going to come out stronger than another? I don't think its going to look any different in the monolingual research than the bilingual research, we are going to use the same methods. I think certain methods may be better for us in some way, eye tracking, looking to objects, if I'm curious to know are you going to recognize one object in one language quicker than in the other language, eye tracking would be a very good way to do that. But maybe someone wouldn't want to do the same thing, and like I said earlier, monolingual kids not getting a lot of English or monolingual kids getting a lot of English, they look at the same objects slower or faster, which people have already looked at and that is true. Methods on monolinguals and bilinguals are not looking much different.

(8) And the combination of methods because there is also this idea that those methods, neuro-imaging and electrophysiological methods, you've probably read this idea that they are more sensitive, they reflect more the knowledge than those behavioural methods. What would you say about this debate?

I would say that it depends on some of the behavioural methods as well, for example looking time is very basic. Pointing to an object if you say 'where is the table?' and I have to go 'oh I have to point to that thing now?' That having to do a full motor control, that's explicit. Or even more so 'repeat a sentence', I can't do that with an 8-month old. Yes some behavioural methods are more overt. Now there are very proper methods for some research questions. Some psychophysiological research is covert, for the most part of it is

implicit, you just see what parts of the brain light up or what brain waves are embedded as I give you a stimulus. That can be informative. There can also be a bit of guesswork there too in the sense that in MRP (mètode) for example, one wave form might mean a couple of different things, and you have to rely on and the history, but the history is based on monolinguals, so even if you see the same wave form in bilinguals, is that really the same thing happening? You're basing it on a previously held idea that's only with monolingual kids. I don't think that psychophysiological methods are necessarily the gold standard in any way shape or form, cause they have their own problems, same area of the brain lights up, once again, are there structural differences in the brain of a monolingual, there are a lot who would argue there are. And so for that same area is the exact same thing. So they are not gold standard but they are very informative in their own way too. I'm doing research right now with heart rate and that's a psychophysiological method, I want to do it because it is implicit. If I'm looking at two kids notice a sound change at a time, when we see sometimes, behaviourally, that bilingual kids don't seem to react the same way as monolingual kids, let's take something very implicit and see what happens. But having said that, once again, I am basing what the heartrate really looks like of past medical research.

(9) Just maybe the last question, in which direction do you think the field is going to progress in the next decade or so?

I think the next decade is going to be all about what you mentioned earlier, variability. In the next decade is going to be how do we explore and figure out what it means to be a bilingual that's hearing 30% French and 70% Arabic compared to a bilingual who is hearing 50% English and 50% Spanish or 60% Catalan and 40% Spanish. All of these comparisons we are going to start to hopefully shake out a bit more, and figure out what do these differences mean. Cause I think we're to the point now, as a field, hopefully, when we can start exploring those kinds of more minute differences and maybe we'll find sort of what we've been finding, generally that really there's going to be a lot more similarities than there are differences.

Ok, that could be.

Or may be not, but that's the joy of science. That's why we do science, we don't know, that's why we have to figure it out.

Ok, thank you very much.

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