

Interview with **Brian MacWhinney**

Edith Moravcsik (EM)

Your BA degree of 1965 was in rhetoric and geology. Yet, just 9 years later, after having earned an MA in speech science, you completed a PhD in psycholinguistics. How did your academic interests evolve across these diverse areas and what have been some major influencing factors?

Brian MacWhinney (BMW)

I fell in love with Geology and the rocks of the Mojave Desert when I was a Freshman at UC Riverside in 1961. The next year at Berkeley, I learned about crystals and mapped the Berkeley Hills. One day, I had my Geology field map in a nice metal folder on the top of my car and, while I walked away, someone decided to steal it. My field Geology teacher awarded me with a failing grade, and I decided to try my hand at something else. It was 1964 and I was becoming involved with the Free Speech Movement at Berkeley and concerns about the war in Viet Nam. Rhetoric seemed to offer ways of understanding what was going on. In 1965, I began work as a teacher, in the ghetto in Oakland, but was then drafted. I managed to serve out two unpaid years as a Quaker conscientious objector working in a HeadStart school in San Francisco. Those were complex times with so many influences, including Chomsky's lectures at Berkeley, Macneilage's work in speech science, linguistic theory from Fillmore and Chafe, and exciting work from Slobin and Ervin-Tripp on child language. I was just so happy that I was able to continue learning through all of it.

EM

In addition to your native tongue, you speak five languages: French, German, Hungarian, Italian, and Spanish. How did you acquire these languages and how has your multilingual competence affected your work?

BMW

When I was 13, I was lucky enough to spend the summer at the home of Luis Echeverria in Mexico City. He was then the Secretary of the Interior, but later he became Mexico's President. It was a great opportunity to learn basic Spanish as I wandered around the city. At Berkeley, I took up Spanish literature and linguistics. In 1964, I spent three months in Madrid and hitch-hiking all over Spain when the all the universities closed from the student strikes.

By 1968, I was in grad school and Berkeley required competence in two languages for the Ph.D., so I decided to pick up German. I had learned a bit as a child and in my senior year in High School, but not enough for the exam. So, in 1968 my wife Mary and I decided to spend 3 months in Vienna and then some time in Germany while seeing the rest of Europe. We took a short visit to my Hungarian relatives in Budapest and Arad. At first, I knew no Hungarian, but everyone did fine in German. That visit whetted my appetite for learning Hungarian and I convinced Susan Ervin-Tripp, Dan Slobin, and the Ford Foundation to support me for a year studying Hungarian child language learning. If one wants to learn a language quickly, I'm convinced that the very best way is to serve as an intern in a nursery school. The children were such fun and the teachers so lovely and supportive. I remember when I submitted my 879-page thesis on how children learn Hungarian, Dan asked me whether I was really going to reject everything that Noam Chomsky had

taught us, and I said that none of the children I had studied seemed to be paying much attention to his theory.

When one has learned Spanish and studied Latin, Italian comes quite easily, but I found French more difficult. In fact, it was not until well into adulthood that I finally became fluent in French. As an adult, I have been in good contact with a few other languages, but once I began serving as a Visiting Professor, I found it almost impossible to escape from relying on English. I haven't yet totally given up on Mandarin.

EM

Your central theory of language acquisition is the competition model. In one of your papers, you illustrate the workings of five different time frames that compete in language with an image particularly familiar to local readers of SKASE: the great astronomical clock of the city hall in Prague. Would you expand on the analogy?

BMW

Yes, I like to think of Prague's Orloj as a metaphor for the interaction of time/process frames. A single complex set of cables and gears inside the tower is responsible for keeping track of hours, days, months, the zodiac, and more. In a sense, our mind is like this too. We have to deal with neurotransmission on the millisecond level and the packaging of the syllable into a time frame of 150 milliseconds. Those syllables then go into breath groups that are longer, but rather more flexible. In conversations, we need to deal with the problem of conversational sequencing by following contributions that last perhaps ten seconds before it is our turn. As a member of social groups, we may wake up in the morning participating in the time and process frame of our family, but then shift to a whole day of work. We then plan the course of our lives with commitments that vary across months, years, and even decades. Around us, there are changes in the language proceeding across decades and centuries and genetic changes in human populations spanning tens of thousands of years. All of these forces across all of these time/process frames have their impact on the way in which you and I utter each sentence. But then what are the gears and cables in our minds that tie these time/process frames together? They involve things like code-switching, language learning, sentence planning, attention shifting, and so much more, but those connections must be in there to allow all of these forces to mesh together in competition and cooperation.

EM

One of the courses that you have taught has been on the relationship between language and thought. How do you view this relationship? In particular, to what extent does language affect how people think?

BMW

I must admit that my thinking about this issue continues to change over time. When I was younger, I focused on the way in which someone who speaks multiple languages ends up finding a core set of meanings and feelings that work smoothly across all the languages. Later, when reading the attempts to demonstrate effects of language on cognition, I became skeptical about linguistic relativity. But more recently, I have focused on trying to acquire really good control over structures such as Mandarin tone, German case-number-gender marking, Spanish clitics, and Hungarian verb agreement. I have come to recognize more deeply the importance of Dan Slobin's focus on "thinking for speaking" and the extent to which one actually needs to pay a bit of attention

to crazy things in language to fully master them, and how that process then shifts one's attention to certain categories and ideas at the moment of speaking.

EM

There is a large number of different contemporary theories about how to describe grammar. Is there any approach that you feel is more akin to your view of language? Do you think the often-noted division between functional and formal theories captures a significant difference?

BMW

Yes, I think that the distinction between formal and functional theories has played a major role for the last 60 years. The formal properties of language are important and fascinating, but we need to go beyond a description of the patterns to understanding why these structures have emerged. That is the goal of emergentist theory which used to be called linguistic functionalism. Good models for how to think about language structure come from sciences such as Evolutionary Biology and even Geology. Emergentist theories invoke a variety of mechanisms to account for structure, ranging from usage-based frequentist accounts to physiological and neurological determination. With the addition of the notion of time/process frames they can also extend to consideration of language change and language evolution. For my own focus on first and second language learning, I find it important to think in terms of the cognitive mechanisms of item-based pattern learning, pattern generalization, competition, proceduralization, and transfer. At the same, I recognize the centrality of social patterns such as parent-child bonding, peer group support, ethnicity, and social class membership.

EM

Two of the large computerized databases that you have created are the Child Language Data Exchange System (CHILDES) and TalkBank. What are their major strengths and how do you view their effect on the field?

BMW

CHILDES is now configured as one of the 14 databases in the larger TalkBank scheme. TalkBank now include AphasiaBank, FluencyBank (stuttering), BilingBank, ASDBank, CABank, ClassBank, PhonBank, HomeBank, TBIBank, RHDBank, SLABank, SamtaleBank, and DementiaBank. Apart from CHILDES, which has been used in over 8000 published studies, we now see rapid uptake of data by computer scientists trying to diagnose dementia, educators trying to analyze classroom talk, and clinicians working with aphasia, TBI (traumatic brain injury), and RHD (right hemisphere damage). Maintaining and extending these banks and the programs that use them has been a huge effort that has distracted me from progress on psycholinguistic theory. However, it is so important for scientific advance. More about this under question #11 below.

EM

Why do you think the acquisition of second languages is so different from first-language acquisition?

BMW

We all know that the process of L2 learning is quite different from L1 learning. As adults, we have much less exposure to good input (unless we work in a Hungarian nursery school) and we have massive interference from L1. We try to compensate for this by making quick transfer from L1 to L2 and this works a bit for the lexicon. However, it leads to serious problems for phonology and morphosyntax. These problems arise from cognitive and social forces, rather than some biologically determined critical period. There are ways in which adults can combat these negative forces, but they require strong motivation, good resources, and some patience.

EM

One of the issues that have been front and center in linguistic discussions for many years is what if anything is innate about human linguistic abilities. How do you see this question?

BMW

Homo erectus and *homo sapiens* spent well over two million years developing support for increasingly smoother communication. The first attempts with gestural language were supported by upright posture and remnant manual dexterity from a previous arboreal existence. These were followed at about 300,000 years ago by the development of a vocal apparatus that could support sophisticated articulations, alongside the gestures. With this support, hominids were able to develop temporal lobe methods for categorization that could underpin lexical development. Past that, there were probably advances around 75,000 years ago in the linkage of frontal with posterior processes to support item-based clausal structure and its generalization. These advances represent the innate core of our language abilities. Beyond this, language structure emerges largely from the constraints imposed by learning, neural processing, and usage.

EM

In addition to being an extremely prolific and highly influential researchers, teaching has also been a persistent activity throughout your career, starting with teaching elementary school in Oakland CA in 1966-1968, followed by being a teaching associate at Berkeley in 1968-1973, and then starting in 1974, as Professor of Psychology at the University of Denver and Carnegie Mellon University. Your continuing interest in pedagogy is also shown by your creating STEP – a System for Teaching Experimental Psychology. What has been the relationship between your research and teaching activities?

BMW

My colleague Herbert Simon, the Nobel Prize winner for his use of psychological theory in Economics, often told me that a good researcher is *ipso facto* a good teacher. At the same time, he emphasized that learning is ultimately an achievement of the learner and not the teacher. So, my goal has always been to provide students with materials from which they can learn and then leave it up to them to draw the connections. The creation of STEP, which was in turn based on the earlier development of PsyScope and E-Prime from running experiment in Psychology is an example of this. Once students have the right tools, they can replicate classic experiments and

create their own new ones without spending weeks in programming. I take the same approach with my grandchildren. I try to give them materials for learning in science, math problems to do, and books to read. After that, learning is all based on what the learner can do.

EM

Which of your publications do you consider most significant?

BMW

I have four favorites:

1. MacWhinney, B. (1975). Pragmatic patterns in child syntax. *Stanford Papers and Reports on Child Language Development*, 10, 153-165. <https://psyling.talkbank.org/years/1975/patterns.pdf>

which I refined and restated in:

MacWhinney, B. (2014). Item-based patterns in early syntactic development. In T. Herbst, H.-J. Schmid, & S. Faulhaber (Eds.), *Constructions Collocations Patterns* (pp. 33-70). de Gruyter Mouton. <https://psyling.talkbank.org/years/2014/IBP.pdf>

2. MacWhinney, B. (1977). Starting points. *Language*, 53, 152-168. <https://psyling.talkbank.org/years/1977/starting.pdf>

which I refined and restated in:

MacWhinney, B. (2008). How mental models encode embodied linguistic perspectives. In R. Klatzky, B. MacWhinney, & M. Behrmann (Eds.), *Embodiment, Ego-Space, and Action* (pp. 369-410). Lawrence Erlbaum. <https://psyling.talkbank.org/years/2008/perspect-symp.pdf>

3. MacWhinney, B. (1987). The Competition Model. In B. MacWhinney (Ed.), *Mechanisms of language acquisition* (pp. 249-308). Lawrence Erlbaum. <https://psyling.talkbank.org/years/1987/CM-summary.pdf>

which served as the basis for dozens of other studies and papers.

4. MacWhinney, B. (2004). A multiple process solution to the logical problem of language acquisition. *Journal of Child Language*, 31(4), 883-914. <https://doi.org/10.1017/s0305000904006336>

EM

What are your plans for future research?

BMW

My goals for the next five years are to develop TalkBank into a system that no longer relies on my support, but which can be implemented and linked by research groups anywhere in the world. There is a lot of fairly heavy lifting here in regards to Computational Linguistics and Automatic Speech Recognition. As I begin to complete this goal, I can turn back to my work on constructing a fuller emergentist account for learning both L1 and L2. This work includes:

1. publishing work I have already completed on the role of perspective-taking and perspective-switching in determining linguistic structure,

2. advancing the theory of competing motivations to account for facts in language processing and structure,
3. using CHILDES data from various languages to model the course of language learning more accurately, and
4. obtaining data on the actual course of L1 and L2 language learning from wearable devices and activity monitoring.
5. improving my Chinese!

EM

Thank you very much for the interview.

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