



The Complete Remembrance of Things Past

Everything you ever did, everything you ever saw, everything you ever heard is locked in your brain for as long as you live. It can be totally recalled. If your skull were opened and a cell touched with an electrode, you might relive the past—as a child watching a train roar into a station, as a 17-year-old under a soft spring moon or as a middle-aged guest at a dinner party.

Wilder Penfield, MD, the founder of the Montreal Neurological Institute, discovered this phenomenon while cutting brain cells to cure a patient of epilepsy. Dr. Penfield was born in Spokane, Washington, in 1891. He went east to school, was a Rhodes scholar and became in time a Canadian citizen, one of the great neurological pioneers, a novelist and a strikingly independent thinker. He died on 5 April 1976, a few days after he was interviewed by Casey Baldwin for *Maclean's Magazine* (19 April 1976). In the excerpts printed below he tells, among other things, how he discovered the hiding place of memory:

"Well, I was operating in a little side room over in the Royal Victoria Hospital, and I had a woman that I was very much puzzled about, a woman who had epilepsy. I knew the attacks of epilepsy were coming from some kind of electrical discharge in her temporal lobe, and so I tried to produce one of her usual attacks, and she said suddenly: 'I feel just the way I did when my daughter was born.' I knew she was sincere—she wouldn't try to pull my leg—but I didn't understand. I didn't even make a note of it. But that was the first time. The next time was about three years later: there was a girl who, in her epileptic attacks, used to have a regular little dream. So I

The Montreal Neurological Institute has had three directors: Dr. Penfield (right), Dr. William Feindel (centre) and Dr. Theodore Rasmussen.

stimulated, and it became perfectly obvious that this wasn't a dream—this was a memory. Her brothers were involved in it, and they authenticated it. And eventually we found that by electrical stimulation you can set off the epileptic phenomenon that is at the basis of each seizure."

[ON THE ABILITY OF CHILDREN, AND THE
DISABILITY OF ADULTS, TO LEARN
FOREIGN LANGUAGES]

"We needed a maid and a friend told me about this woman called Fräulein Bergman. She came and she couldn't speak a word of English, thank heavens: our four children, ages one to 10, quickly became fluent in German. Mrs. Penfield and I learned it the hard way, and we always spoke it badly. The evidence is clear that there is a mechanism within the brain that makes learning of language easy. But a change takes place about the age of eight, about the time teachers start to teach a second language, so they are defeated before they begin. The brain of the young child sets up two frames (or three, if they are hearing French, German and English) within the brain, and when they are hearing French they are building into the French frame. And it stays there, it's never lost. . . . If you can just give the child a chance to start to make a frame for another language, you have altered his whole mechanism within the brain."