How You Know

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I've read Villehardouin's chronicle of the Fourth Crusade at least two times, maybe three. And yet if I had to write down everything I remember from it, I doubt it would amount to much more than a page. Multiply this times several hundred, and I get an uneasy feeling when I look at my bookshelves. What use is it to read all these books if I remember so little from them?

A few months ago, as I was reading Constance Reid's excellent biography of Hilbert, I figured out if not the answer to this question, at least something that made me feel better about it. She writes:

> Hilbert had no patience with mathematical lectures which filled the students with facts but did not teach them how to frame a problem and solve it. He often used to tell them that "a perfect formulation of a problem is already half its solution."

That has always seemed to me an important point, and I was even more convinced of it after hearing it confirmed by Hilbert.

But how had I come to believe in this idea in the first place? A combination of my own experience and other things I'd read. None of which I could at that moment remember! And eventually I'd forget that Hilbert had confirmed it too. But my increased belief in the importance of this idea would remain something I'd learned from this book, even after I'd forgotten I'd learned it.

Reading and experience train your model of the world. And even if you forget the experience or what you read, its effect on your model of the world persists. Your mind is like a compiled program you've lost the source of. It works, but you don't know why.

The place to look for what I learned from Villehardouin's chronicle is not what I remember from it, but my mental models of the crusades, Venice, medieval culture, siege warfare, and so on. Which doesn't mean I couldn't have read more attentively, but at least the harvest of reading is not so miserably small as it might seem.

This is one of those things that seem obvious in retrospect. But it was a surprise to me and presumably would be to anyone else who felt uneasy about (apparently) forgetting so much they'd read.

Realizing it does more than make you feel a little better about forgetting, though. There are specific implications.

For example, reading and experience are usually "compiled" at

the time they happen, using the state of your brain at that time. The same book would get compiled differently at different points in your life. Which means it is very much worth reading important books multiple times. I always used to feel some misgivings about rereading books. I unconsciously lumped reading together with work like carpentry, where having to do something again is a sign you did it wrong the first time. Whereas now the phrase "already read" seems almost ill-formed.

Intriguingly, this implication isn't limited to books. Technology will increasingly make it possible to relive our experiences. When people do that today it's usually to enjoy them again (e.g. when looking at pictures of a trip) or to find the origin of some bug in their compiled code (e.g. when Stephen Fry succeeded in remembering the childhood trauma that prevented him from singing). But as technologies for recording and playing back your life improve, it may become common for people to relive experiences without any goal in mind, simply to learn from them again as one might when rereading a book.

Eventually we may be able not just to play back experiences but also to index and even edit them. So although not knowing how you know things may seem part of being human, it may not be.

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- Japanese Translation