

# A neuroscientist explains what tech does to the reading brain

*It's not a zero-sum game*

By [Angela Chen@chengela](mailto:Angela.Chen@chengela) Aug 27, 2018, 3:19pm EDT

For anyone who has ever been a reader, there's much to sympathize with in Maryanne Wolf's [Reader, Come Home](#). The UCLA neuroscientist, a great lover of literature, tries to read Hermann Hesse's *Glass Bead Game*, an old favorite, only to realize that she finds him boring and too complex. She wonders why he ever won a Nobel. And Wolf, who previously wrote [Proust and the Squid: The Story and Science of the Reading Brain](#), is horrified that this is what has happened to her ability to concentrate.

*Reader, Come Home* is about, as its subtitle states, "the reading brain in a digital world." *The Verge* spoke to Wolf about how technology is changing the brain, what we lose when we lose deep attention, and what to do about it.

*This interview has been lightly edited for clarity.*

**Throughout the book, you talk about the idea of "circuits" in the brain that affect how we read and process information. Can you explain this key concept?**

When we have any function, whether it's language or vision or cognitive functions like memory, we aren't dealing with a straight line to the brain that says "This is what I do." The brain builds a network of connections, a network of neurons that have a particular role in that function. So when we have a new cognitive function, like literacy, it doesn't have a preset network. Rather, it makes new connections among older networks, and that whole collection of networks becomes a circuit. It's a connected scaffolding of parts.

The beauty of the circuit for functions like literacy is its plasticity. You can have one for each different language, like English or Chinese or Hebrew. And then something miraculous happens: the circuit builds upon itself. The first circuits are very basic — for decoding letters as we're learning to read — but everything we read builds upon itself.

**So what's changing now with technology? How is that affecting our circuits?**

The fact that a circuit is plastic is both its beautiful strength and its Achilles' heel. Reading reflects our medium. And to the extent that a digital medium is going to require us to process large amounts of information very quickly, it will diminish from the time we have for slower processing work.

And these slower processes are deep learning, the ones that are more cognitively challenging. They're the basis for going beyond that initial short circuit of decoding the information and understanding it at a very basic level. The digital medium affords rewards and advantages fast processing at the cost of the slower processes that build our very important critical, analytical, and empathetic processes.

**Why is it zero-sum, though? Surely it's good to be able to skim when needed. Why does one take away from the other?**

This is a question that requires a very careful attempt at explanation. It's not zero-sum, but we have grown used to skimming. People like you and me who spend six to 12 hours a day on a screen are led to use the skimming mode even when we know we should use a more concentrated, focused mode of reading.

It's an idea I call "cognitive patience." I believe we are all becoming unable to take the time to be patient because skimming has bled over into most of our reading.

**How long does it take to "return," so to speak? You said that after two weeks of focused reading, you felt like your old reading self. Do we have research on this?**

Not yet. The research is beginning, but it's by no means able to answer that question. My very simplistic, reductionist, qualitative study of myself was of a person who had been steeped in literature and whose motivation was at the highest level. I think we need more research to understand what it would take for every person to have the ability to switch purposefully and know what they are doing when they choose to read something in different modes.

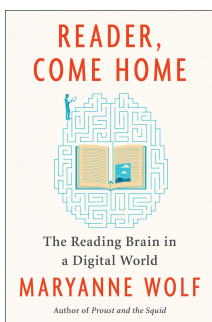
**What would this look like?**

My proposal is for a "bi-literate brain." We need to train children to evaluate what is before them. What is the best medium? There are certainly going to be more than two mediums, and some will be far more visual or kinesthetic. So the real goal is to figure out how to preserve what we have in deep reading and be able to exert that at will.

Focused reading is so important, and I'm just as guilty as everyone. I have to force myself to slow down, often printing things out or using print as a medium for things that are most important, or for things whose beauty would be lost if I use other modes of reading. We need to read as a bridge back to yourself, and these bridges are necessary.

**What are the consequences of all of us becoming skimmers?**

Skimming has led, I believe, to a tendency to go to the sources that seem the simplest, most reduced, most familiar, and least cognitively challenging. I think that leads people to accept truly false news without examining it, without being analytical. One of my major worries is that when you lose the novel, you lose the ability to go into another person's perspective. My biggest worry now is that a lot of what we're seeing in society today — this vulnerability to demagoguery in all its forms — of one unanticipated and never intended consequence of a mode of reading that doesn't allow critical analysis and empathy.



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