Trevor Lund

Prof. Clarke

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Summation of *The Shallows: What the Internet is Doing to our Brains*

“I’ve had an uncomfortable sense that someone, or something, has been tinkering with my brain.” This quote by Nicholas Carr, the author of *The Shallows*, sums up his fears about the future of the Internet and the effect it might have on humanity. In his book, many interesting points are brought up regarding our dependence on the Internet and the eventually shift in brain structure to compensate for that new form of learning, if you call it that. In his book, Carr reveals the history of books and the Internet and describes in great detail the physical changes they can make to our brains.

In the first chapter, Carr unfolds his background and how he has been affected by the recent changes in his brain. He builds up his detailed background so we can make a connection with him in his struggles against technology. He eventually leads up to a page talking about how he wants to be connected at all times, and ends the chapter saying he misses his old brain.

Throughout the book Carr references the methods by which our brains make connections, memories, and ultimately learns. Chapter two is when he really introduces how the brain connects itself to form thoughts. He explains the debates between the leading scientists of the day, how some believed that the brain was formed at birth and never made physical changes throughout that person’s entire life, versus the scant others who believed that that brain changes constantly whenever a person learns a new skill or creates a new memory. He explains in detail how the synapses of brain cells reform and make connections to different parts of the brain when something new is learned. The brain is plastic and remolds itself all the time. Carr makes a point that our brains can be restructured, reorganized, and just redone by doing tasks repetitively, like being on the web. Throughout all of this, he walks through the history of the study of the brain, and works his way up to our current understanding, and how that fits in with his idea that the Internet is changing our brains. In the other chapters of the book, Carr revisits these ideas, especially in chapters seven and nine, both relating to memory and how it’s stored in the brain.

Chapter seven is called “The Juggler’s Brain” and deals with multitasking and how it can distract us from focusing on a single source and misinterpret or misunderstand the meanings behind the different things we are concentrating on. Carr points to numerous studies in this chapter that show how bad multitasking for concentration. Carr uses a terrific analogy for multitasking. He compares learning to filling a bathtub with a thimble. A book is like a trickle, so the thimble can easily catch most of the information and learn it. With the Internet, that trickle turns into a faucet on full blast, and multitasking increases the number of those faucets running. The thimble can only pick up so much of that water to store, so inevitably you’ll end up forgetting most of that information.

As for chapter nine, or “Search, Memory”, it ties in nicely with the ideas laid out in chapter seven by talking about the difference between short-term and long-term memory and how short-term can only store two to three pieces of information at any time. In order to be learned, the short-term memory has to be transferred to long-term memory. In this chapter, Carr gets technical when talking about the proteins that cause changes to happen in the brain. He refers to a case of a man who came down with epilepsy and doctors discovered that they had to remove part of the hippocampus, which resulted in the man forgetting memories from as long as two years prior. It was in this case that scientists discovered that the hippocampus was vital to a person’s memory. The hippocampus, according to Carr, stores memories because its synapses can change so quickly. “[Once] the hippocampus helps stabilize the memory in the cortex [it begins] its transformation from a short-term memory into a long-term one,” writes Carr. He goes on to talk more about the hippocampus, how it functions almost as a conductor for the entire brain.

As I talked about before about not being able to function as effectively when multitasking, Carr mentions a similar effect that happens when people view information in a multimedia format (i.e. text and pictures, text and video, etc.). He gives a nod to several studies that were conducted showing people who read a document without hyperlinks comprehended the reading better than those who read a document littered with hyperlinks and other imagery.

Another large part of Carr’s book is focused on humans using and developing tools and their effect on society. Chapters three and ten talk about using the tools while in six and four, Carr talks about the development of technology, primarily books. Carr points to research that shows when a monkey uses a wrench, their brain believes that the wrench is an extension of the arm. Carr suggests that the same thing happens when humans use computers and the Internet. Just in the way a carpenter uses a hammer as an extension of his hand, Internet users use the Internet as an extension of their brain, usually for additional memory capacity.

Carr spends a lot of time developing the background and history of how influential technology came about. He gives an extensive history of the alphabet and the beginnings of books. He explains how people once thought books would be bad, just as we now see the Internet as being bad and he concedes that point. Later, in chapter six, Carr describes the changing face of books, in that they now appear on-screen just as much as they appear off. He tells how reading a book online isn’t the same because of all of the distractions that are on the screen or the knowing feeling that your Internet is sitting in the background, running, in most cases. In talking about this subject, Carr delves into the world of Google, and how it is making things easier for people.

Carr’s eighth chapter is devoted to Google. Part of the chapter talks about how Google refined and perfected search, making it easier for people to use. He references a study that shows people who used helpful tools to complete puzzles suffered in the long run as opposed to those who completed the puzzles without help. Carr talks about how Google is always looking to optimize productivity and uses tons of data to measure their successes. Along with that thought, Carr mentions that Google is looking to perfect artificial intelligence in their ultimate goal, leading them down a path to collect all of the data humankind knows. To further along this strategy, Google opens Google Book Search, trying to index the many multitudes of books in the world and make them searchable. Many companies, libraries, and individuals oppose on the basis that Google has a business goal and not just an ethical goal in mind. They file lawsuits against Google, but they settle and Google continues garnering knowledge.

Overall, Nicholas Carr’s book invokes many different ideas and general fears about the Internet. Emphasizing the physical changes the Internet is making to our brains, and the overall change in thought processes as we move from a book-based society to an Internet-based society, Carr writes a stunning novel about the future of our society as a whole.