Will vs. Web

Eleanor Brown asks if the Internet is killing our ability to concentrate and analyze.

Joe Henson NYC

THINK FOR TIME
ELEANOR BROWN

SOMETHING STRANGE IS HAPPENING TO MY BRAIN: IT CAN'T KEEP STILL.

And not in a good way. My mind is restless, hungry, desperate for a constant flood of input. At traffic lights, I reach for my phone to check Twitter. I click a hyperlink to an article that sounds interesting and give up halfway through because it's too long and I can't stay focused. Instead, I post something on Facebook, then return again and again to see how many likes and comments it has gotten.

I am jittery, anxious, unable to concentrate.

I'm guessing that a number of you recognize these symptoms in yourself. As a novelist and reader, their effects are disturbingly obvious to me, but our new frantic, distractible consciousness affects us all.

When former *Wired* writer Nicholas Carr documented these changes in an article for *The Atlantic*, he titled it: "Is Google Making Us Stupid?" His research turned up an unsettling answer: yes.

He expanded that research into a book that was a finalist for the Pulitzer Prize: *The Shallows: What the Internet Is Doing to Our Brains* (W.W. Norton and Company, 2011). I approached reading it with a sense of relief and dread. Finally, I thought, someone can explain why my mind is changing. But finally, I feared, someone will tell me that the Internet has destroyed my capacity to think.

All the knowledge in the world is at your fingertips, but so is a video of a squirrel on waterskis.

THE MODERN BRAIN

The fact is the Internet is actually changing our brains. This in itself is not surprising. Carr devotes an entire chapter to explaining the ways in which our brains can be re-mapped and re-formed when they are challenged in different ways. But the most important thing to understand is this: our brains are flexible and adaptable, like plastic. This neuroplasticity means we can change and adapt to new circumstances: as we learn to manage new experiences, we create new connections and pathways in our brains.

By explaining the role memory plays in learning, Carr shows the effects of the Internet on our brains and the way it connects to our behavior and our increasing difficulty focusing.

When I was working in education, I spent a lot of time arguing against the importance of having students memorize things. In this brave new world, with humanity's accumulated knowledge literally at our fingertips, I argued, it is more useful to learn how to access information than it is to spend that same time memorizing said information. At the most basic level, why should we need to memorize phone numbers if we have devices that will give us access to them immediately?

But Carr explains that memory is more than just a tool for remembering locker combinations and song lyrics. Our "working memory," the shortest of short-term access, is highly limited: we can process only two to four pieces of information at any time, and every additional demand on our attention reduces our performance (despite our claims that we are excellent multitaskers).

The multiple media options on a typical web page could exceed our working memory's limit by itself, and when we are connected to the Internet, it is guaranteed that we will overwhelm our working memory with the uncontrolled flood of stimuli.

And that's where Google is making us stupid.

First, when our working memory is overloaded, we lose the ability to evaluate each bit of incoming information. Each new piece of stimuli starts to feel like an attack, and our memories work to withstand them rather than identify and manage them, causing confusion and anxiety.

Second, that overload hampers our ability to transfer information to our long-term memory, which is, yes, where you file away your joyful recollection of that time you caught the fly ball and won the big game, but it's also the place where we make connections and create knowledge.

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Without the time to evaluate the information that is being delivered to us, let alone make it part of our greater schema of understanding, being online is like being buffeted by an endless wind. This is how you can sit down to look up one thing, fall down a rabbit hole of hyperlinks and related searches, and emerge an hour later, dazed and glazed, staring at the Wikipedia entry about cheese, with no memory of how you got there or of anything you encountered along the way.

Each "intellectual technology" (Carr's term for things such as maps and clocks that help support our mental powers) affects the way we think and behave and ultimately how we function as a society.

But we are poised at a fairly seismic divide between two very different intellectual technologies: the book and the Internet.

ENGAGING VS. DECODING

Engaging with books produces a specific kind of thought because of their length. Because reading is generally a solitary activity, that thought is individual, and the connections we make to books are deeply personal (ask any *Twilight* fan). Books are long form, allowing writers space to develop (and readers to follow) complex arguments or theories. Carr describes the type of thinking books encourage as "contemplative, reflective, and imaginative." That personal, reflective style of thinking has been with us for literally hundreds of years—since the printing press made books accessible and available to the general public.

The Internet, however, is designed for distraction. Web pages are filled with media: text, links, images, video, audio, flashing sidebars. Parsing an unfamiliar web page can feel like a game of pinball.

In fact, though we call interacting with a web page or a printed page the same thing— "reading"—they are two very different activities. Carr cites studies that show we use completely different areas of our brains when we are reading online or in a book.

When we read on the Internet, we use the parts of our brains that deal with "decision making and problem solving," but not, ironically, the parts that manage "language, memory, and visual processing," according to Carr. Those latter parts are engaged when we read books.

This made the most sense to me when I started to observe myself reading web pages. I pulled up a news site and found myself forced to begin choosing what to concentrate on immediately. Where did I want to look first? The large video in the center of the screen? The red "breaking news" banner above it? The headlines? Before I even begin to read, I have made a dozen decisions.

Early writing, Carr explains, was *scripta continua*: uninterrupted lines of text with no breaks between words, sentences and paragraphs. Reading in that format was an act of decoding, not of analysis. When a standardized system of spelling and punctuation came into being, we began to read differently. Instead of expending all our energy on simply understanding what we were reading, we could really become involved in the argument or the story.

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But reading online returns us to an era of *scripta continua*. The number of interruptions on the web—in the form of multiple media options, notifications and hyperlinks—means that we are never engaging. Instead, we are constantly decoding.

Hyperlinks, in fact, are a major issue in reading. If you are reading a longer piece with a high level of concentration, stumbling over a hyperlink will immediately send you back into decision-making mode, removing you from that book-like "contemplative" thinking.

Don't believe me? Try this: Read a Wikipedia article (nearly any one will do, but the more hyperlinks, the better). Pay attention to what your brain does as you are reading. You will likely notice yourself shifting back and forth—very quickly—between attempting to read for content and making decisions about whether or not to follow the links.

What if I entirely lose my ability to read anything longer than 140 characters? What if all of us do?

Because of the constant interruptions and the visual chaos of the Internet, we read differently online. Studies show that rather than moving through every word in a linear fashion, as we typically do on a printed page, we skim. Instead of reading closely, we scan along "in a pattern that (resembles) the letter 'F,'" Carr writes.

(Your next experiment: the next time you read a long blog post or article online—maybe even this one—try to catch yourself reading in that pattern. It happens as we focus in on the first and last sentences of paragraphs and skim for key words.)

I find myself scanning this way in longer pieces of text online, even ones I have chosen to read for a purpose. The only cure for me is to print out the content and read it on paper, often with highlighter in hand. No matter how much I try to focus, if I am reading online, I find myself skimming in that F formation, barely taking in the content.

This is incredibly frustrating to me. My will and my interest are unable to overcome the way my brain has been re-trained by the Internet. As someone who has spent much of her life lost in books, who has been accused repeatedly of ignoring her loved ones in favor of the printed page (guilty, oh-so-unapologetically guilty), my inability to focus saddens and terrifies me.

Is Google making me stupid? What if I entirely lose my ability to read anything longer than 140 characters? What if all of us do?

SLAVES TO THE WEB?

Many of us spend enormous amounts of time on the Internet. We work, play and socialize there. And the Internet has taught us that it is not rewarding to read deeply but to dip in here and there, searching for the information we need and leaving as soon as we find it.

Google is constantly refining its algorithms to increase the speed of this process, to get us the "best" results more precisely and more quickly—but to what end?

As Facebook and Google increasingly become the centers of our digital lives (and arguably our entire existence), it's worth pausing to think about their motivations. We think about the content we encounter on Google or Facebook, but we rarely think about the corporations behind it. Despite their lofty mission statements, these companies trade and profit in the quick reward—the more Google searches we conduct, the more we refresh our Facebook wall, the more ads we see.

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Facebook and Google, as well as other commercial websites, have no interest in encouraging us to become (or stay) contemplative thinkers. In fact, that is exactly the opposite of what they need of us as consumers, and their software, which influences the way we think, is designed to prevent lengthy contemplation. Our interactions with platforms like Facebook and Google and the ways they reward us—with bite-sized answers to our questions—make the Internet resemble nothing more than a vast and highly addictive slot machine.

I'll admit that halfway through *The Shallows* I was ready to join the Amish. At the very least, I thought, I should give up my smartphone and its painfully addictive siren song that divides us at social gatherings and makes us slaves to cheerful chirps of notification. It alarms me how much I am tied to my own phone, and it distresses me when I see the same behavior in other people. When I observe people in social situations checking their phones instead of interacting—intermittent reward, the gambler's addiction—I wonder what it is we are allowing ourselves to become.

If a book-centered society values the individual, the Internet-centered society values community. We create knowledge and meaning together (think Wikipedia or trending topics on Twitter), which is both wonderful and dangerous. But we are also increasingly fragmented, self-selecting the topics and information we surround ourselves with, dividing ourselves into smaller and smaller sub-societies, each of which becomes its own echo chamber.

Carr discovered the impact of the Internet is far-reaching: it's affected our memory, our reading habits and our self-esteem.
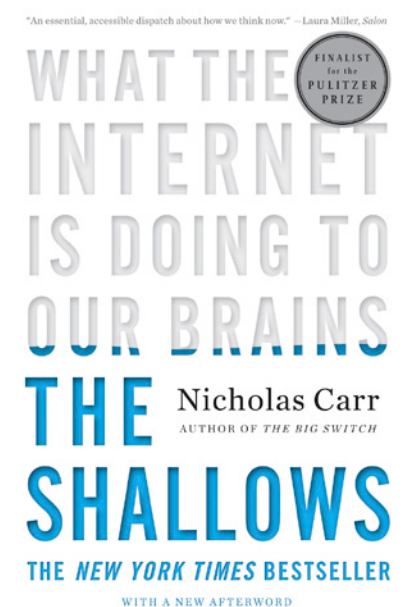
And we're more and more dependent on each other for our self-worth. There is no space for private thought on the Internet. Everything is social. Everything must be shared and commented on, largely without any thought or examination before doing so.

We come to value ourselves based on the external judgments of others: numbers of likes or comments on Facebook posts or retweets on Twitter. Outsourcing our self-esteem, Carr argues, intensifies the addictive nature of the Internet. Even when we're offline, he says, "Our social standing is, in one way or another, always in play, always at risk." We're compelled to return to check our follower counts again and again, to reassure ourselves that in the moments we have been away, we have not somehow been forgotten.

Our desire to stay connected at all times increases our distractibility. Smartphones and computers offer us multiple alerts, in both visual and audio form. Take our Pavlovian response to the chime of an email. That small sound can have a surprisingly large impact on our behavior.

Carr mentions a study in which office workers checked incoming email 30 to 40 times every hour, each time shifting their attention and their focus and harming their productivity. We click away to quickly read or answer an email, but we might not return to our original task until 20 or more minutes later, disoriented and frustrated by how little we seem to accomplish during a workday.

Lest you scoff and think that you are far less dependent on your email, the workers observed in those studies reported checking their email far less. The studies revealed 30 to 40 times an hour was how often they actually checked their mail.

As I read *The Shallows*, every time I found myself wanting to leave the book to go check something on the Internet, I made a mark on the side of the page. As fascinated as I was with the book, my mind has become so used to wandering that I found myself marking at least every other page. Because I was interested, these were not random desires to tune out and watch my Twitter stream go by. More often, they were places where I wanted to know more—studies or articles Carr cited that I wanted to read, the history of intellectual technologies that I wanted to learn about—in short, places where a hyperlink would have existed had I been reading online.

I found that exercise, along with the others I have mentioned throughout this article, both enlightening and upsetting. The number of times I wanted to abandon even a book I was enjoying because my mind was wandering distressed me. But the reasons behind why I wanted to leave it interested me.

And ultimately, I think this is what Nicholas Carr wants us to do after reading *The Shallows*: to consider the question. He is not a Luddite who wishes to abandon the Internet, and neither am I. No writer would even think of such a thing because of the time it saves us in research and the water-cooler community it offers to such a solitary profession.

RECLAIMING THE BRAIN

There is a broad space between hurling ourselves unthinkingly into the Internet and becoming yak ranchers somewhere web-free in Mongolia.

Part of the solution is simple awareness. When I catch myself skimming something I genuinely want to read, I shake my head and refocus, forcing my mind to absorb every word. If it's longer, I print it out, which is perhaps less friendly to the environment but more friendly to my poor, overwhelmed working memory.

When I write, I use Internet-blocking software. This sounds punitive, but the product I use is called Freedom, and I find that, surprisingly, to be the precise feeling it evokes. I never realize how stressful I find the Internet until I disconnect from it entirely. If for some reason (typically research-related) I want to stay online, I find the simple act of closing my email client and browser refocuses me on what I'm doing by removing those visual cues to refresh, refresh, refresh.

In the car, I put my phone in the back seat. At dinner, I leave it in my bag, however tempting it is to produce it to solve some conversational impasse by consulting Uncle

Once, we weren't constantly connected. And once, we were all just fine.

Google. When I am reading a book, I turn on the phone's Do Not Disturb feature and leave it in the other room.

Once, we weren't constantly connected. And once, we were all just fine.

Words without web.

These are all behavioral fixes that do not resolve the way the Internet has rewired my brain, but they do contribute to changing it. The more I force my brain to function without the Internet, the more it relearns how to do so. And if nothing else, the effect on my mood and my stress level has been monumental.

But mostly, what all these things do is make me conscious again. Conscious of my thinking, my actions and my desires. Part of the issue is that the Internet is training us to be distracted, but to me the larger issue is that by allowing ourselves to lose focus, we are trading off certain types of thinking without even acknowledging it.

We're at a vital juncture where it is still possible to see the forms and values of both a traditional way of thinking and the new mind the Internet is shaping for us. Eventually, the purity of that comparison will be lost, so we must ask the question now, while we straddle the border between the book-mind and the Internet-mind: what do we value and what are we willing to do to keep it? ❋

ADDITIONAL READING

- *Hamlet's Blackberry: Building a Good Life in the Digital Age*, William Powers
- *The Filter Bubble: What the Internet Is Hiding From You*, Eli Pariser
- *Cognitive Surplus: Creativity and Generosity in a Connected Age*, Clay Shirky
- *Program or Be Programmed: Ten Commands for a Digital Age*, Douglas Rushkoff

ABOUT THE AUTHOR

*Eleanor Brown is the **New York Times** and international bestselling author of the novel **The Weird Sisters**. She has been doing CrossFit for two years and trains at CrossFit Modig in Highlands Ranch, Colo.*