

BRYAN GARDINER SCIENCE 09.08.15 11:00 AM

BIG QUESTION: IS SPEED READING ACTUALLY POSSIBLE?

A C C O R D I N badge icon on my phone, I have 667 unread articles in my Instapaper account. I also have 12 un-downloaded novels waiting for me on Amazon's servers, 142 unopened emails, and suffer from what the Japanese call [tsundoku](#) (an unwieldy pile of books and magazines annexed my nightstand and desk long ago).

Like a lot of people, I'm drowning in words. It's no wonder then that speed reading—reading at an increased speed with no loss of comprehension—is an increasingly popular recourse for both [the GTD crowd](#) and anyone who [worships at the altar of productivity](#). Who wouldn't want to breeze through their reading list at 2,500+ words per minute and devour [Johnny Five levels of input](#)?

That's more or less the promise that [Evelyn Wood's Reading Dynamics](#), [Tim Ferriss' PX Project](#), software called [Spritz](#), and countless other speed-reading techniques make to overwhelmed readers. Some involve suppressing your inner speech while reading. Others teach you to “chunk,” or take in multiple lines of text in a single glance. Still others eliminate the need to move your eyes at all. Unfortunately, decades worth of psychological research and more recent insights into the visual processing system seem to confirm only one thing: Doing things quicker means doing them less accurately. Can you learn to read faster? Absolutely. But you won't understand what you've read nearly as well ... if at all.

The Fast and the Spurious

Most educated people can read at approximately the same rate an auctioneer speaks (between 250 to 400 words per minute) with good comprehension. For comparison, the rate of a normal conversation between two people falls between 150 and 160 words per minute (also the recommended rate for podcasts and audiobooks). That makes normal reading an enormously complex process. “If you understand and appreciate that,” says [Elizabeth Schotter](#), a cognitive psychologist at UC San Diego, “it becomes really obvious that no human being can read 1,000 or 2,000 words per minute and maintain the same levels of comprehension they do at 200 or 400 words per minute.”

In a forthcoming research paper, “So Much to Read, So Little Time: How Do We Read, and Can Speed Reading Help?” Schotter and her co-authors explain the mental and visual processes involved in reading—from the symbols the eye takes in, to the cognitive processing that goes on in the background. It's an intricate dance between a number of visual and mental processes, one that's highly dependent on language.

Unlike speech, reading and writing are, to borrow a phrase from evolutionary psychologist and linguist [Steven Pinker](#), “cognitively unnatural.” Parents don't have to teach an infant to speak—it's simply a [human instinct](#). Writing, on the other hand, doesn't come naturally. Why does this matter? Rather than

being a purely visual process, both reading and writing piggyback on language and speech. This has profound consequences for how humans process and understand writing, consequences that almost all speed-reading techniques ignore or distort.

Ignore the Voice in Your Head

Take one of the more common bad guys in the world of speed reading: sub-vocalization. This is the inner speech readers hear in their heads as they read silently. “Because we all learn to speak and listen before we learn to read, almost everyone tends to access the sounds of speech when they read,” says Schotter.

For proponents of speed reading, sub-vocalization is simply a disposable holdover from when humans learned to read aloud. Suppressing it, the theory goes, will reduce the drag this internal voice has on an individual’s internal reading rate.

Here’s the problem: When scientists tried to get people to eliminate these sub-vocalizations—by having them constantly hum while reading, or playing a tone when a sensor measured any activity in their vocal cords—comprehension dropped precipitously. “There’s a lot of evidence that when people recognize words visually, they access the sounds of those words to understand them,” Schotter says.

Consider what happens when you show people words that sound like a different word and then ask them to make a quick judgment about them—like “Is this word a food, yes or no?” “If you give them a word that’s not a food, say ‘MEET,’ but the word sounds like an actual food word (M-E-A-T), then they’re more likely to say yes even though it’s the wrong answer,” says Schotter. Even when people do answer no, it takes them much longer to do it, she says. And yet when presented with a visually similar word like “MELT,” people have no problem giving the correct answer.

Regression Transgressions and Saccades

Modern speed reading techniques also like to target the time sucks known as regressions and saccades. The former describes the quick, unconscious re-readings humans do when they don’t understand something. The latter is a word for the jerky, 0.1-second eye movements a reader uses to move his or her fovea (center of vision) from one word to another. Those words also get brief, 250-millisecond pauses, which are called fixations.

[Spritz](#), a company that uses a method known as RSVP (Rapid Serial Visual Presentation), eliminates these time-wasting eye movements by presenting one word at a time for you, highlighting what it calls the “Optimal Recognition Point,” or ORP of each word.

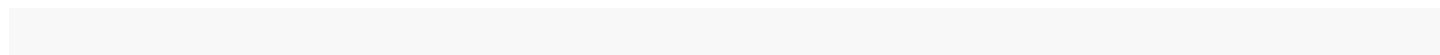
Again, the science says this tends to have a negative impact on comprehension. As Schotter found in a [previous study](#), eliminating a reader’s ability to go back and reread something takes away an important tool for understanding the text. “The software and apps don’t know what you’re doing, they don’t know what your internal representation is, so they can’t compensate for a failure in understanding because they don’t have access to that knowledge,” she says.

Similarly, while technically you don't obtain any new visual information during saccades, research has shown that cognitive processing continues during this time. In essence, your brain uses those 0.1-second blips to continue working through what you've just read. Take that away and, well...

Catching My Drift

Woody Allen sums it up best: "I took a course in speed-reading...and was able to read War and Peace in twenty minutes. It's about Russia." That quote gets at one of main criticisms levied against speed reading, but also one of the core scientific problems in completely discrediting it. While it's easy to track eye movement and measure reading speed, measuring comprehension is trickier.

"It's kind of an open question," admits Schotter. "What does understanding a sentence or a paragraph or a text really mean? How detailed does your knowledge of the actual words versus the gist versus everything in between have to be?" Studies even suggest reading behavior changes based on the types of comprehension questions you ask. "For example, people read in a different way if they anticipate a question is going to ask them about a particular word," says Schotter.



Assigning a comprehension score to open-ended summaries of text tends to be subjective, so researchers like Schotter usually measure comprehension with multiple-choice questions presented after a sentence or paragraph. But those tests are still only as good as the questions—and the incorrect answers provided as foils for the right one.

↓ ↓ The Gist Paragraph ↓ ↓

Despite such difficulties, most scientific evidence still points to one thing: Speed reading is essentially just a form of skimming. And hey, skimming can be great (even preferable) in some situations. Software like Spritz and other RSVP approaches—Instapaper now has its own speed-reading feature as well—can be useful for reading shorter emails and texts, particularly on tiny smartwatch screens. But if your goal is to read large chunks of text faster and still wrest as much meaning and insight from it as possible, science really only has two solutions for you: Read more to increase your vocabulary, or read things you already know a lot about.

#COGNITIVE SCIENCE

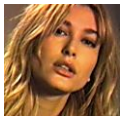


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