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APPS & SOFTWARE

The 'Brain App' That's Better Than Spritz

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We all have so much to read these days. Wouldn't it be nice if we could read it *faster*? The possibility that this fond wish could actually be granted by technology is what's driving the buzz about Spritz, a new speed-reading app that debuted at the Mobile World Congress in Barcelona last month and will soon come loaded on new Samsung devices. (For now, you can try out Spritz on this demonstration page.)

Its makers claim that Spritz allows users to read at staggeringly high rates of speed: 600 or even 1,000 words per minute. (The average college graduate reads at a rate of about 300 words per minute.) Spritz can do this, they say, by circumventing the limitations imposed by our visual system.

It is true that "our eyes impose a lot of constraints on the act of reading," as cognitive neuroscientist Stanislas Dehaene writes in his book *Reading in the Brain*. "The structure of our visual sensors forces us to scan the page by jerking our eyes around every two or three tenths of a second." These eye movements take time, slowing down the rate at which we can read.

But what if the *words* moved, instead of our eyes? That's the innovation behind Spritz, which employs a technique called rapid sequential visual presentation, or RSVP. When using the app, words are presented one at a time, in the exact spot where our gaze is "focalized," or primed for visual recognition. Then that word is whisked away and another appears in the same, optimal place — and quickly, quickly, others follow.

RSVP has been studied by scientists for years, and it does appear to bypass the speed limit imposed by eye movements during normal reading. But there's another check on reading speed that Spritz can't do anything about: our ability to comprehend what we're reading. When we read really fast — especially in complex or difficult material — our understanding of the text suffers. (I'm put in mind of the old Woody Allen joke: He speed-read *War and Peace*, he cracks, and came away with the insight that "it's about Russia.")

But all is not lost for those of us who would like to read faster, at least some of the time — because there does exist an "app" of sorts that has been proven to allow faster reading *and* complete comprehension. It's called expertise. In their forthcoming book, *Make It Stick: The Science of Successful Learning*, researchers Henry Roediger III and Mark McDaniel (along with writer Peter Brown) liken expertise to a "brain app" that makes reading and other kinds of intellectual activity proceed more efficiently and effectively. In the minds of experts, the authors explain, "a complex set of interrelated ideas" has "fused into a meaningful whole."

The mental "chunking" that an expert — someone deeply familiar with the subject she's reading about — can do gives her a decided speed and comprehension advantage over someone who is new to the material, for whom every fact and idea encountered in the text is a separate piece of information yet to be absorbed and connected. People reading within their domain of expertise have lots of related vocabulary and background knowledge, both of which allow them to steam along at full speed while novices stop, start, and re-read, struggling with unfamiliar words and concepts.

Deep knowledge of what we're reading about propels the reading process in other ways as well. As we read, we're constantly building and updating a mental model of what's going on in the text, elaborating what we've read already and anticipating what will come next. A reader who is an expert in the subject he's reading about will make more detailed and accurate predictions of what upcoming sentences and paragraphs will contain, allowing him to read quickly while filling in his already well-drawn mental model. A novice reader, by contrast, faces surprises at every turn in the text; her construction of a mental model is much more effortful and slow, since she's building it from the ground up.

Lastly, the expert reader is able to vary the pace of her reading: skimming parts that she knows about already, or parts that she can tell are less important, then slowing down for passages that are new or that (she can judge from experience) are especially important. The novice, on the other hand, tends to read at just a single speed: if he tries to accelerate that speed, by skimming or by using an app like Spritz, it's likely his comprehension will slide. What's worse, he probably won't even realize it: lacking deep familiarity with the subject, he won't know what he doesn't know, and may confuse main ideas with supporting details or miss important points altogether.

Expertise has its own limits, of course. Becoming an expert is a long, slow process, and each of us can develop true expertise in only a few areas. But reading with the aid of this "brain app" permits us to read swiftly *and* with depth and understanding — while reading with an app like Spritz allows us only to read simply, foolishly fast.

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