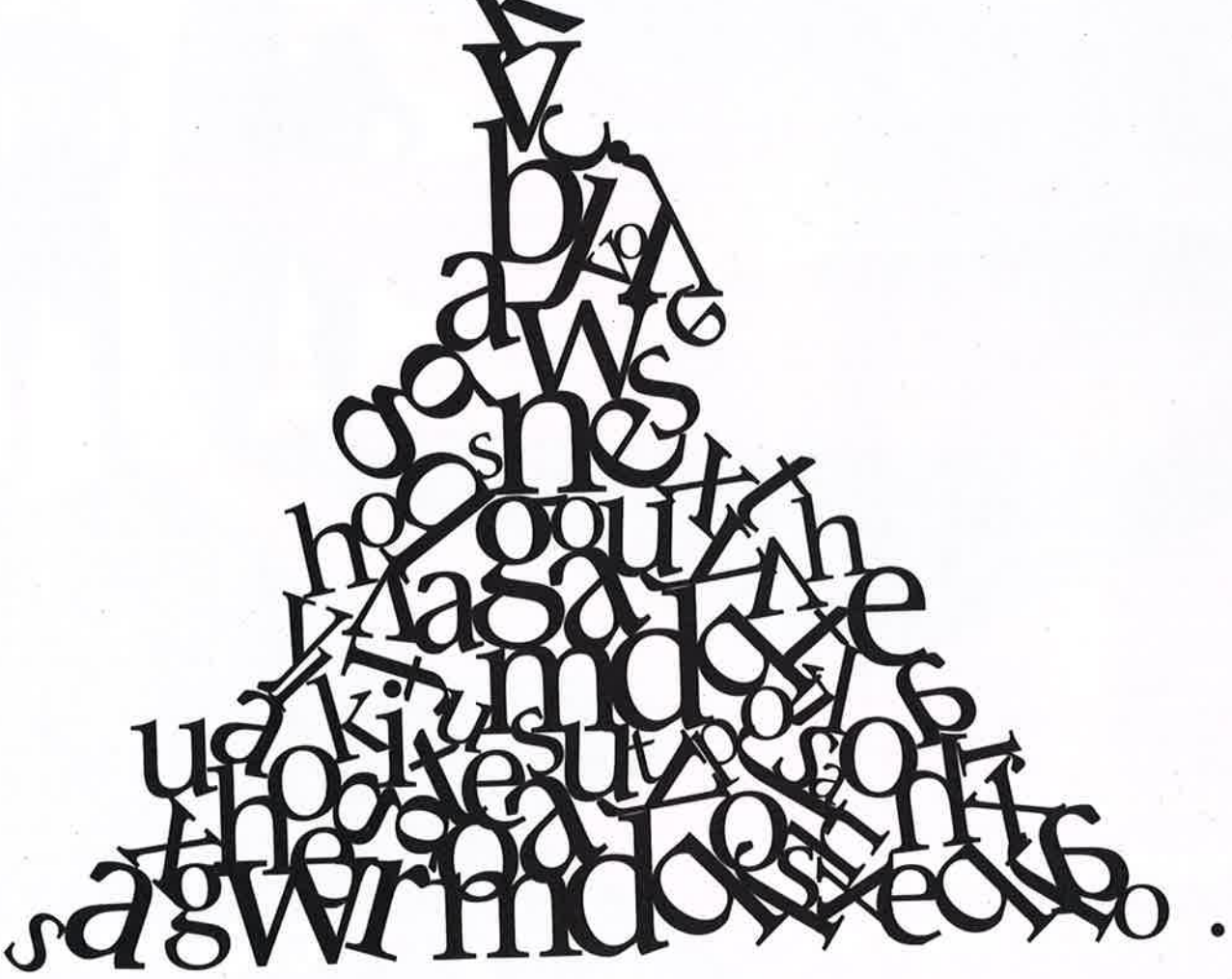
A MOUNTAIN OF WORDS



Emails, social media and online news mean we have more reading to do than ever before. How best to cope, wonders **Emma Young**

THE onslaught of words begins the moment you wake up. Even before dressing, you may check your emails, peruse the morning news online, respond to texts and skim your Twitter feed. Then, at work, there are reports, memos or articles to be read and more emails to deal with. You might even dip into some prose for the sheer pleasure of it.

With the rise of the internet and social media, many of us encounter far more written information than earlier generations. This daily deluge of text can be overwhelming. Whether you're struggling to cope or would just like to read even more, it's tempting to wonder whether there are better methods.

We know that the human brain is capable of amazing feats. "People are now memorising decks of cards in less than 20 seconds, and an individual recently solved eight Rubik's cubes under water in a single breath," says David Balota of Washington University in St Louis, Missouri. "It's interesting to speculate whether such training may be achievable within the reading domain."

Realistically, most of us can never hope to challenge six-times world speed-reading champion Anne Jones, who has clocked up rates of 4251 words a minute. But there are ways anyone can get more from what they read. To read more efficiently and more accurately, you just need to know which advice to follow and which to ignore.

The average university-educated person reads between 200 and 400 words per minute. Historically, reading better has been synonymous with reading faster. Since US teacher Evelyn Wood pioneered the concept of speed-reading in the 1950s, there has been a proliferation of courses and books promising to teach people to read up to five times faster without any loss of comprehension. Now modern technology has made the idea even more attractive. One popular app called Spritz, for example, has been used by millions of people worldwide, according to the company behind it. It even comes pre-loaded on some cellphones.

"Until recently, speed-reading systems were only available on training courses, so you'd have to go out and enrol and it would take several weeks," says cognitive psychologist Elizabeth Schotter from the University of South Florida. "With the tech-based approaches, one claim is that you don't need to do any training and you can start right away. That's really appealing, because people are always looking for quick and easy ways to solve their life problems – like having too much to read."

However, until recently, we had little idea of whether speed-reading actually works. To find out, Schotter and her colleagues have evaluated many of the most popular strategies and systems. Their findings make disappointing reading.

Take the common "solution" suggesting that your reading will accelerate if you learn to get rid of sub-vocalisations. The trick here is not to "hear" the words in your mind, and to rely solely on a "visual" reading process. Internal vocalisation is a time-wasting carry-over from how we learned to read, aloud, as children, the argument goes. However, Schotter and her colleagues point to good evidence that getting rid of this inner speech reduces comprehension. It makes sense that translating visual information into an aural form helps readers to understand it, she says, given that the primary form of language is vocal and auditory. We started talking to each other at least 100,000 years ago but it wasn't until about 3400 BC that Mesopotamians invented a written language.

Another popular concept used in apps is to present single words rapidly, one after the other. With Spritz, for example, users can set the rate at anything between 250 and 1000 words per minute. It is claimed that this does away with the need to make eye movements. ›

ATTENTION! ATTENTION!

Reading is good for you. Literary fiction has recently been shown to improve our ability to understand other people's emotions. And a study has also found that reading an engrossing book of any kind is an effective stress-reliever. Yet, just when we have evidence for the millennia-old concept of "bibliotherapy", reading for pleasure seems to be on the wane. Last year, 73 per cent of US adults read at least one book, in any format – down from 79 per cent in 2011.

It may simply be that we are devoting more of our reading time to shorter texts online. But Maryanne Wolf, director of the Centre for Reading and Language Research at Tufts University in Massachusetts sees a more disturbing possibility. Many forms of digital and online materials require the reader to regularly switch attention from audio to visual presentations, or from one website to the next. This, she argues could be shortening our attention spans, making it harder to sustain the focus needed to concentrate on – and benefit from – a literary novel or even a non-fiction book.

Evidence for this idea is still lacking. However, a report by Microsoft published in 2015 puts the attention span of the average Canadian at 12 seconds in 2000 and just 8 seconds in 2013. Meanwhile, studies in which people are interrupted at random intervals while reading and asked what they are thinking indicate that mind-wandering is both common and highly variable. We spend anywhere between 15 and 50 per cent of the time off-task.

The good news is that our ability to focus can be improved if something alerts us when our attention starts to wander. If Wolf is correct, reading more books should also help. The Slow Books movement, which encourages people to luxuriate in the pleasures of reading, agrees. It advocates spending between 30 and 45 minutes a day reading a printed book or an e-book with internet connectivity switched off.

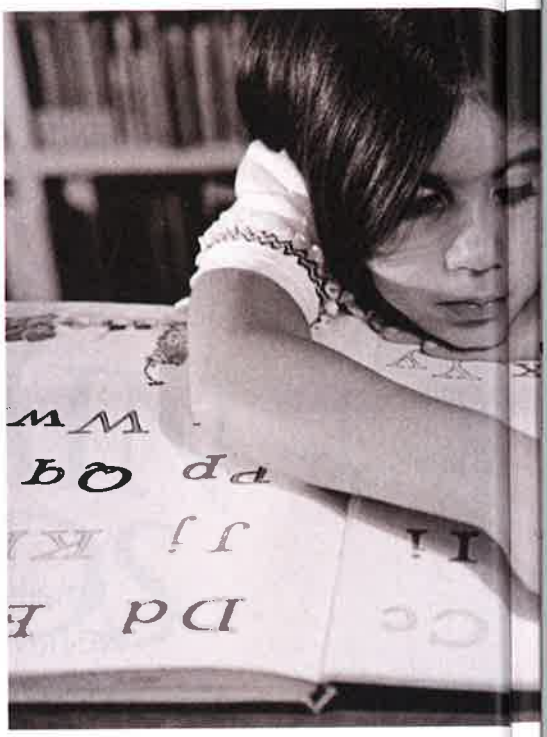
"The argument that we waste time with unnecessary eye movements is subjectively compelling," says Balota. Unfortunately, it's wrong.

Research on how we read demonstrates why. The first step is for the eyes to focus on the letters. Visual acuity is highest in the fovea, the centre of the visual field, which is roughly equivalent to the width of the thumb when held at arm's length from the eye. Quick eye movements – saccades – allow a reader to shift the fovea from one word to another. Each forward saccade generally spans about seven letters. On average, the eyes then hover for about 250 milliseconds on a word, and the brain is still working to understand what has just been registered as they flick onward. But reading is not a constant forward-moving process. About 30 per cent of the time, we skip a word. This usually happens when the word is very short (such as "of" or "at"), frequent (such as "been" or "very") or predictable, given what has just been read. And about 10 to 15 per cent of the time, we go back to a previous word, perhaps because we realise we haven't understood it properly or, given new information, we want to revisit it to aid our comprehension. When an app is relentlessly moving you on through a text, previewing and reviewing are not possible, and comprehension is reduced, says Schotter.

> "A good reader, averaging 400 words a minute, can double their speed"

Our understanding of normal reading also undermines the speed-reading strategy known as "chunking". Advocates often claim that, with practice, readers can learn to visually take in entire groups of words and phrases, even those well outside the fovea, in single fixations. Schotter says this doesn't work because chunking isn't physiologically possible and, besides, reading speed is limited by our ability to attend to, identify and understand words, rather than our inability to see them.

For wannabe speed-reading champions, Schotter's assessment of these strategies is disheartening. "They're all kind of crazy," she says. "They're not absurd. But they only seem reasonable if you haven't really studied the reading process." Claims of spectacular reading rates have not been verified scientifically, she adds. In speed-reading competitions, for example, readers are



asked questions about the text to test their comprehension. But it's possible to get a correct answer by skimming and making intelligent guesses to fill in the gaps.

It's not all bad news. Schotter believes that a "good" reader, averaging 400 words per minute, can probably double their speed – but not triple it, which is often claimed by speed-reading systems. However, she cautions, this isn't really "reading", but "effective skimming" – and there will inevitably be some deterioration in comprehension. Still, if all you want from a document is the gist, skimming is a smarter approach than reading. And you don't need to buy an app or attend a special course. Schotter recommends that you concentrate on subheads and on the first and last sentences of paragraphs, because this is often where the key information is to be found – in "good writing" at least. And if the first sentence of a paragraph suggests it will be useful to read it carefully, then you can.

A strategy like this will require the reader to fill in the gaps using suppositions based on what has been read. If you want to read faster without compromising comprehension, there are no shortcuts, says Schotter. The maximum speed at which we can move between words, while still understanding what we're reading, is largely determined by our familiarity with

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those words. While one person may hesitate over "insignificant", it could take "floccinaucinihilipilification" to slow another down. Schotter's advice? "This is never a popular thing to say, but read more. Expand your vocabulary and your general knowledge about the world."

So, a smarter approach to reading involves appreciating your limitations, and recognising the drawbacks and benefits of effective skimming. But it should also involve a consideration of the medium you use, because reading from a screen is not the same as reading in print.

It's very hard to put a figure on how much reading people are now doing on screen. "No one has meaningful data comparing minutes per reading platform," says Naomi Baron at American University in Washington DC, author of *Words Onscreen: The fate of reading in a digital world*. However, according to the Pew Research Center, in Washington DC, about half of the newspaper-reading population of the US relies exclusively on the print version. And, in 2016, 65 per cent of US adults read at least one print book – down from 71 per cent in 2011. Over the same period, those that read an eBook rose to 28 per cent from 17 per cent. However, in the past year eBook sales have dropped off in the US and UK – the second biggest consumer globally – perhaps because they are becoming more expensive, Baron says.

Reading on screen is often seen as a "good thing", especially when it comes to education, says Anne Mangen at the University of Stavanger in Norway, who chairs a European Union initiative called E-READ. However, this view is largely untested. "There is a lack of knowledge and a very strong drive from the technology industry," she says. "A lot of the debates and discussions and decisions – in the educational field especially – are based on assumptions, and on almost a faith in the technology. People say 'Oh, but it's more motivating and this is the way most people read and will be reading'."

In fact, research Mangen has been involved with hints that people find it harder to comprehend information presented in a PDF format on a computer screen, compared with the same text on paper. This could be because it is more difficult to navigate an online text, to return to a part you want to revisit. A reader might remember that a segment of information was about a quarter of the way into a printed document, two-thirds of the way down a physical page, but that contextual information is missing from an electronic book. "It's interesting to read studies finding that there is a preference for print for study purposes," she says. This might help explain, and provides some support, for the idea that it is smarter to read complex material that you want to fully comprehend in print rather than on a screen.

The same may apply when reading for pleasure. Mangen has found that people who used a Kindle to read a short mystery story were worse than paperback readers at recalling the sequence of plot events, probably because the tactile sense of progressing through a story that a paperback provides is not offered by an electronic reading device, she says. There is also some evidence that readers feel more empathy with characters when they read from paper.

> "It is smarter to read complex material in print rather than on a screen"

Still, depending on the reason for reading, there are potential advantages to reading on screen and online. The facility for increasing the size of the typeface is one. The keyword search function and the ease of cross-referencing are others. However, there may be trade-offs here too. "Using 'Find' typically leads us only to read the specific item we are looking for rather than benefiting from reading the surrounding text," says Baron. And flitting between websites could be reducing our ability to focus (see "Attention! Attention!", left).

As with speed, the best advice is to tailor your reading platform to suit your goals. But whatever you want out of a text, there's one thing we can all do to become better readers. "The critical element is not time spent reading or even the reading platform but concentrating on the work in front of you," says Baron. "Some slow readers don't process much of what they read while some fast readers are actually excellent at both memory and analysis."

"The real issue for me," she says, "is that when one undertakes to read a work whose content one cares about – whether that's fiction or non-fiction – the reading gets one's undivided attention." ■

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Our brains are evolved for talking but humans only began reading 3600 years ago

Emma Young is a writer based in Sheffield, UK