

# Read Actual Books, Put Pen to Paper for a Better Brain

[Tom Chatfield](#) | [The Guardian](#)

My son is 18 months old, and I've been reading books with him since he was born. I say "reading", but I really mean "looking at" – not to mention grasping, dropping, throwing, cuddling, chewing, and everything else a tiny human being likes to do. Over the last six months, though, he has begun not simply to look but also to recognise a few letters and numbers. He calls a capital Y a "yak" after a picture on the door of his room; a capital H is "hedgehog"; a capital K, "kangaroo"; and so on.



Reading, unlike speaking, is a young activity in evolutionary terms. Humans have been speaking in some form for hundreds of thousands of years; we are born with the ability to acquire speech etched into our neurones. The earliest writing, however, emerged only 6,000 years ago, and every act of reading remains a version of what my son is learning: identifying the special species of physical objects known as letters and words, using much the same neural circuits as we use to identify trees, cars, animals and telephone boxes.

It's not only words and letters that we process as objects. Texts themselves, so far as our brains are concerned, are physical landscapes. So it shouldn't be surprising that we respond differently to words printed on a page compared to words appearing on a screen; or that the key to understanding these differences lies in the geography of words in the world.

For her new book, *Words Onscreen: The Fate of Reading in a Digital World*, linguistics professor Naomi Baron conducted a

survey of reading preferences among over 300 university students across the US, Japan, Slovakia and Germany. When given a choice between media ranging from printouts to smartphones, laptops, e-readers and desktops, 92% of respondents replied that it was hard copy that best allowed them to concentrate.

This isn't a result likely to surprise many editors, or anyone else who works closely with text. While writing this article, I gathered my thoughts through a version of the same principle: having collated my notes onscreen, I printed said notes, scribbled all over the resulting printout, argued with myself in the margins, placed exclamation marks next to key points, spread out the scrawled result – and from this landscape hewed a (hopefully) coherent argument

What exactly was going on here? Age and habit played their part. But there is also a growing scientific recognition that many of a screen's unrivalled assets – search, boundless and bottomless capacity, links and leaps and seamless navigation – are either unhelpful or downright destructive when it comes to certain kinds of reading and writing.

[Across three experiments](#) in 2013, researchers Pam Mueller and Daniel Oppenheimer compared the effectiveness of students taking longhand notes versus typing onto laptops. Their conclusion: the relative slowness of writing by hand demands heavier “mental lifting”, forcing students to summarise rather than to quote verbatim – in turn tending to increase conceptual understanding, application and retention.

In other words, friction is good – at least so far as the remembering brain is concerned. Moreover, the textured variety of physical writing can itself be significant. In [a 2012 study at Indiana University](#), psychologist Karin James tested five-year-old children who did not yet know how to read or write by asking them to reproduce a letter or shape in one of three ways: typed onto a computer, drawn onto a blank sheet, or

traced over a dotted outline. When the children were drawing freehand, an MRI scan during the test showed activation across areas of the brain associated in adults with reading and writing. The other two methods showed no such activation.

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