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Do Smartphones Make Us Smarter or Dumber

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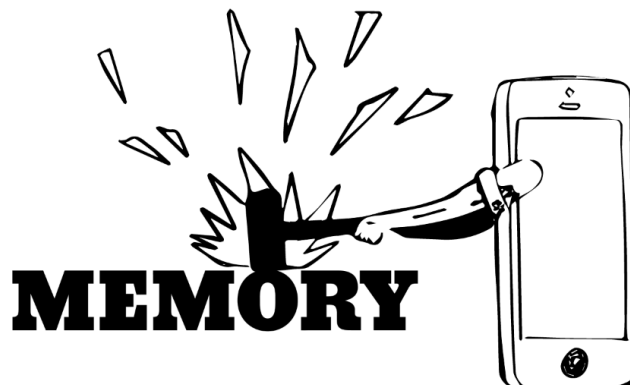
Mobile technology is ubiquitous. Across the world, people are glued to their smartphones and tablets; we compulsively reach for our iPhones whenever we have a spare moment, using them to connect with friends, play games, and keep up with the news of the day. What affect does this constant distraction and access to information have on brain function?

To answer that question, I contacted two leading cognitive neuroscientists: Ian Robertson, a professor of psychology at Trinity College, Dublin and Maryanne Wolf, the director of the Center for Reading and Language Research at Tufts University. I recorded phone interviews with both of them, and using the audio recordings from those interviews, I created a hand-drawn animation that seeks to illustrate both the negative and the positive affects that these new technologies can have on our brains.



Ian Robertson

Robertson takes the position that mobile technology can have detrimental affects on cognition, memory and creativity. Citing a recent study demonstrating that brief periods of "wakeful resting" are essential for organizing thoughts and events into more complex narratives, and he argues that the constant distraction provided by smartphones can damage long-term memory. Robertson refers to the connection between wakeful resting and enhanced memory as "consolidation," and he argues that mobile technology is fundamentally at odds with consolidation.



Beyond damaging long-term memory, Robertson also suggests that mobile technology can disrupt creative processes. Similar to the point he makes about wakeful resting, he argues that daydreaming is the essential ingredient in creative thought.

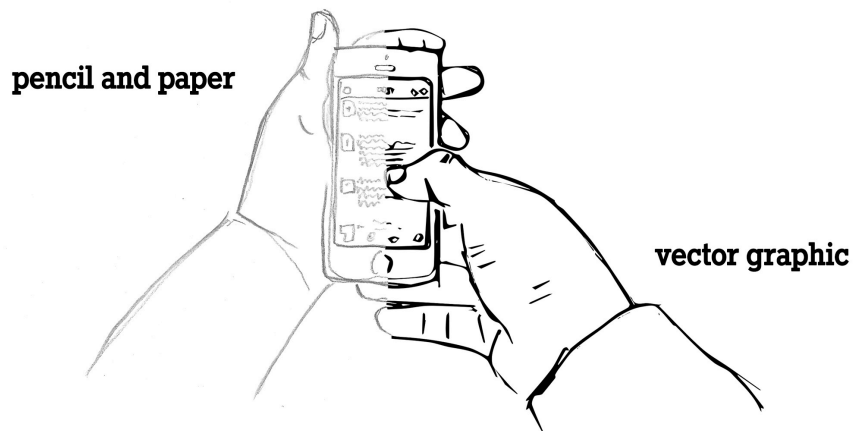


Maryanne Wolf

As a counterpoint to Robertson's somewhat grim perspective, Maryanne Wolf sees potential in mobile technology to be used to spread knowledge. Smartphones and tablets can be harnessed to spread literacy, she argues, particularly to disadvantaged populations in the developing world.

Wolf is one of the founders Global Literacy Project, a collaboration between experts at MIT Media Lab and Technology, Tufts University, and Georgia State University to develop learning systems that can be used on mobile devices to enable children to learn to read on their own, without schools or any instruction from adults. In my animation, she describes a case study in Ethiopia, in which she and other academics delivered Android tablets with literacy apps installed on them to illiterate children and observed some basic reading development in them.

I chose to tell this story using animation because both of my interview subjects were only able to speak with me over the phone, and animation provided the easiest way to produce relevant visuals. In order to create a consistent aesthetic throughout the video, I drew every image by hand, using pencil and paper. I then scanned each of the images and transformed them into vector graphics. I used a combination of animation techniques, including rotoscoping, which involves filming live-action segments and animating each frame, and kinetic typography.



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