

Does the Internet rewire your brain?

Tom Stafford

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Being online does change your brain, but so does making a cup of tea. A better question to ask is what parts of the brain are regular internet users using.

This modern age has brought with it a new set of worries. As well as watching our weight and worrying about our souls, we now have to worry about our brain fitness too – if you believe the headlines. Is instant messaging eroding the attention centres of our brains? Are Facebook, Twitter and other social media tools preventing you from forming normal human bonds? And don't forget email – apparently it releases the same addictive neurochemicals as crack cocaine!

Plenty of folk have been quick to capitalise on this neuro-anxiety. Amazon's virtual shelves groan with brain-training books and games. (I confess I am not entirely [innocent myself](#)). You can fight the cognitive flab, these games promise, if you work that grey matter like a muscle.

But is this true? Are sudoku puzzles the only thing stopping the species turning into a horde of attention-deficient, socially-dysfunctional, email addicts – part human, part smartphone?

Fear not, there is some good news from neuroscience. But first, it is my duty to tell you the bad news. You may want to put down your phone and take note, this is the important bit.

The truth is that everything you do changes your brain. Everything. Every little thought or experience plays a role in the constant wiring and rewiring of your neural networks. So there is no escape. Yes, the internet is rewiring your brain. But so is watching television. And having a cup of tea. Or not having a cup of tea. Or thinking about the washing on Tuesdays. Your life, however you live it, leaves traces in the brain.

Brain workout

Worrying about the internet is just the latest in a long line of fears society has had about the changes technologies might bring. People worried about books when they first became popularly available. In Ancient Greece, Socrates worried about the effect of writing, saying it would erode young people's ability to remember. The same thing happened with television and telephones. These technologies did change us, and the way we live our lives, but nothing like the doom-mongers predicted would stem from them.

But is the internet affecting our brains in a different, more extraordinary way? There is little evidence to suggest harm. Here we are, millions of us, including me and you, right now, using the internet, and we seem okay. Some people worry that, even though we cannot see any ill-effects of the internet on our minds, there might be something hidden going on. I am not so worried about this, and I'll tell you why

We regularly do things that have a profound effect on our brains – such as reading or competitive sports – with little thought for our brain fitness. When scientists look at people who have spent thousands of hours on an activity they often see changes in the brain. Taxi drivers, famously, [have a larger hippocampus](#), a part of the brain recruited for navigation. Musicians' brains devote more neural territory to brain regions needed for playing their instruments. So much so, in fact, that if you look at the motor cortex of string players you see bulges on one side (because the fine motor control for playing a violin, for example, is only on one hand), whereas the [motor cortex of keyboard players bulges on both sides](#) (because piano playing requires fine control of both hands).

So practice definitely can change our brains. By accepting this notion, though, we replace a vague worry about the internet with a specific worry: if we use the internet regularly, what are we practicing?

Get a life

In the absence of any substantial evidence, I would hazard a guess that the majority of internet use is either information search or communication, using email and social media. If this is so, using the internet should affect our brains so that we are better at these things. Probably this is already happening, part of a general cultural change which involves us getting better and better at [dealing with abstract information](#).

Internet use would only be a worry if it was getting in the way of us practicing some other life skill. If Facebook stopped people seeing their friends face to face that could have a harmful effect. But the evidence suggests this is not the case. If anything, people with more active internet lives have [more active “meat-space” lives](#). Most of us are using the internet as a compliment to other ways of communicating, not as a substitute.

So there is no magic extra risk from the internet. Like TV before it, and reading before that, it gives us a way of practicing certain things. Practice will change our brains, just like any habit. The important thing is that we are part of this process, it is not just something that happens to us. You can decide how much time you want to put into finding [pictures of funny cats](#), bantering on Facebook or fitting your thoughts [into 140 characters](#). There will be no sudden damage done to your brain, or great surprises for your brain fitness. You would be a fool to think that the internet will provide all the exercise your brain needs, but you would also be a fool to pass up the opportunities it offers. And those pictures of funny cats.