How the digital world is reshaping our brains

LINDA RAY
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Our love affair with technology is at an all-time high, but have we really considered the costs?

We are seeing the first generation of people entering a new career who have been born with devices as a constant part of their lives. There is no denying, our relationship with and dependancy upon technology has grown significantly in the past two decades, but are we ignoring the impacts on our brain and at what cost?

The impact of the digital world has crept up on us, sabotaging our downtime and creating new social norms. We are even seeing new terms developed to explain the digital world.

“Phubbing’ – a word used to describe the act of snubbing someone in a social setting by looking at your phone instead of paying attention.
Overload is the current state of affairs

Our working lives are dominated by computer screens, and thanks to the demanding, fragmentary and distracting nature of the internet, we are finding it harder to focus at work and switch off afterwards. This state of affairs has wide-reaching implications. The Baroness Susan Greenfield, an Oxford neuroscientist, believes that mobile technology and what we do with it, is now at the centre of our family and social life, like the piano was for the Victorians and the TV was for baby boomers. Since it’s mobile, it’s more of a concern. We are plugged in at home, at work – in fact, everywhere and, for many of us, all the time.

“Look,” Greenfield says, “the human brain has been described as ‘exquisitely plastic’. It’s very sensitive to the environment. Your brain will change in reaction to your environment every moment of your life. The question we should be really interested in is how technology is making the brain change?”

In the past, technology was always a means to an end; a way to travel faster, or a way to cook food better – but now technology is often the end in itself.
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Larry Rosen, a Californian psychologist and one of the world’s leading authorities on technology overuse, believes the consequences of living life through a screen are already being seen in heavy users, who have diminished attention spans, impaired learning and difficulty forming relationships in the real world. Rosen says:

Technology by its engaging nature is creating multiple problems. It encourages rapid, continuous task-switching, which means that we are only processing information at a shallow level and not deeply so we’re not able to have complex thoughts but only superficial ones. We’re also finding certain technologies such as video gaming produce dopamine in the brain at high levels, which our brain interprets as pleasure and that makes us want to do it more. Smartphones are also causing people enough anxiety that they are checking them every 15 minutes or even more, often to help reduce the anxiety of missing out on important information.
Are we hooked on distractions?

Your body releases a little hit of dopamine ❤️ every time an email arrives in your inbox or when someone tweets at you. 📩

This tiny jolt overwhelms the less immediately gratifying pleasure that is found in unbroken periods of thought and introspection. Unfortunately, we can easily become hooked on these distractions.

Technology has many advantages, but the devices that were designed to make us more productive are now creating a new set of productivity problems.

According to Carol Kinsey Goman, a contributor for Forbes:

*When laptops, personal digital assistants (PDAs) and cell phones are close by, attendees at workplace meetings struggle to keep their focus on the speaker. It’s just too compelling and easy to check email, text messages and surf the web instead. Of course, these workers think that they are multitasking. But, when it comes to the brains ability to pay attention, the brain focuses on concepts sequentially and not on two things at once. In fact, the brain must disengage from one activity in order to engage in another. And it takes several tenths of a second for the brain to make this switch.*
How our attention is being reshaped

The effect on attention

Many neuroscientists and neuropsychologists believe that cellphones, e-mail, online chat, laptops, and video games, all turned on and operating simultaneously, seriously alter the brain’s “attention mechanisms.”

According to Matt Richtel, in a series for The New York Times called Your Brain on Computers, “an individual’s ability to focus is undermined by the digital characteristics of information bursts.” The effects on the brain aren’t only apparent while individuals use these devices. Fractured thinking and lack of focus is apparent long after the devices have been turned off as well.

“There’s no doubt that technology is rewiring our brains,” says Nora Volkow, director of the National Institute of Drug Abuse. A renowned neuroscientist, she compared the need for digital stimulation to the need for food and sex – two essential aspects of life, but harmful if done in excess.
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There's no escaping that technology is necessary in modern life, but our love affair with technology is not only resulting in lower productivity from constant invitations to distraction, but is also resulting in us losing our memory, our empathy, our capacity for conversation, our moments of insight and creativity and in doing so, what makes us human.

These might sound like messages of doom and gloom, but the evidence is mounting and clearly showing we must start to take action if we want to guard against the long-term consequences of these new habits. We must learn to manage distractions and stay in control of our brains.

According to the latest research, the effects of digital disruption are leading to:

- digital dementia
- drop in empathy and compassion
- fear of being alone

Digital dementia, a concept first described by German neuroscientist Manfred Spitzer in 2012, is on the rise.
Digital Dementia is the term used to describe how overuse of digital technology is resulting in the breakdown of cognitive abilities in a way that is more commonly seen in people who have suffered a head injury or psychiatric illness.

Korean researchers investigated the impact of heavy digital use on Korean young people who are amongst the most prolific digital users in the world. They found heavy technology users see greater development of the left hemisphere, leaving the right side untapped or underdeveloped. The right side of the brain is associated with concentration and when underdeveloped affects both memory and attention span. When we don't develop our memory muscle in the brain we see a drop in expressive and reflective language skills.

Sherry Turkle in her book *Reclaiming Conversation – The power of talk in a digital age*, suggests we are being silenced by our technologies... in a way “cured of talking”.

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In the last 20 years, we have seen a 40% decline in the markers for empathy in college students, most markedly in the last 10 years. Digital communication has replaced conversations.

Communicating by text is safe. We can carefully craft and recraft a message. We fight by text, break up by text and when we do this we are protected from the emotional impact of our message on the other. We don’t see the impact of our interaction.

We are losing practice in the empathetic arts – learning to make eye contact, to listen and to attend to others. Without face to face communication, our conversations remain superficial.

Turkle suggests the flight from conversation is a bit like climate change, hard for us to grasp the consequences of a future 30 years away, and questions whether we have assessed the full human consequences of digital technology.

Recent research shows that people are uncomfortable when left alone – even for a few minutes!
Devices offer the illusion of companionship without the demands of intimacy. Living in a world where alone time is not valued and being alone makes us feel uncomfortable, we turn to our devices to keep us company. But what are we missing when we avoid this discomfort? Boredom facilitates creativity and innovation. Insights require a ‘quiet’ brain – one that is not constantly distracted and active.

Where do your best insights come from? Is it when you are texting?
What can we do to protect our brains from potentially harmful effects of the digital world?

- Establish device free time and device free zones in the classroom, the home, and the workplace.
- Develop policies and protocols that manage in a proactive way the potential harms of the digital world.
- Don’t sleep with your phone
- Stop multitasking
- Pick up the phone or better still go see people and have a conversation with them
Work Smarter... Not Harder!

Develop outstanding Leadership capabilities by harnessing the power of your most important asset.

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