Multitasking

In the social media era, we're all required to do several things at once. But this constant multitasking is taking its toll. Neuroscientist Daniel J Levitin talks about our addiction to technology and its impact.

Our brains are busier than ever before. We're assaulted with facts, pseudo facts, jibber-jabber, and rumour, all posing as information. Trying to figure out what you need to know and what you can ignore is exhausting. At the same time, we are all doing more. Thirty years ago, travel agents made our airline reservations and salespeople helped us find what we needed in shops. Now we do most things ourselves. We're doing a broad spectrum of tasks while still trying to keep up with our lives, our families, our hobbies and our favourite TV shows, and helping us do all this is our smartphones. They play a pivotal role – part of the 21st-century mania for cramming everything we do into every single spare moment of downtime.

But there's a fly in the ointment. Although we think we're multitasking – doing several things at once – and making a good job of it, this is a powerful illusion. Now new research shows that the mind can easily deal with two separate tasks at the same time, because it can channel them into the two separate parts of the front of the brain. However, when a third activity was introduced the mind became overloaded. Earl Miller, a neuroscientist at MIT and world expert on divided attention, says that our brains are 'not wired to multitask well … When people think they're multitasking, they're actually just switching from one task to another very rapidly. And every time they do, there's a cognitive cost in doing so'. So we're not actually keeping a lot of balls in the air like expert jugglers; we're more like amateur plate spinners, frantically switching from one task to another, ignoring the one that's not right in front of us but worried it'll come crashing down any minute. Even though we think we're getting a lot done, ironically, multitasking makes us demonstrably less efficient.

Multitasking has been found to increase the production of the stress hormone cortisol as well as the fight-or-flight hormone adrenaline, which can overstimulate your brain and cause mental fog or scrambled thinking. Multitasking creates a dopamine-addiction feedback loop, effectively rewarding the brain for losing focus and for constantly searching for external stimulation. To make matters worse, the area of the brain known as the prefrontal cortex has a novelty bias, meaning that its attention can be easily hijacked by something new – the proverbial shiny objects that we use to entice infants, for example. The irony here for those of us who are trying to focus amid competing activities is clear; the very brain region we need to rely on for staying on task is easily distracted.

Just having the opportunity to multitask is detrimental to cognitive performance. Glenn Wilson, former visiting professor of psychology at Gresham College, London, calls it info-mania. His research found that being in situations where you're making a concerted effort to concentrate on a task as an email sits unread in your inbox reduces your effective Intelligence Quotient (IQ) by almost 10 points. Wilson showed that the cognitive losses from multitasking are even greater than the cognitive losses from taking certain drugs.

Russ Poldrack, a neuroscientist at Stanford, found that learning information while multitasking causes the new information to go to the wrong part of the brain. If students do their homework and watch TV at the same time, for instance, the information from their schoolwork goes into the striatum, a region specialised for storing new procedures and skills, as opposed to facts and ideas. Without the distraction of TV, the information goes into the hippocampus, where it's organised and categorised in a variety of ways, making it easier to retrieve.

To make matters worse, lots of multitasking requires decision-making: Do I answer this text message or ignore it? How do I respond to this? It turns out that decision-making is also very hard on our neural resources and that little decisions appear to take up as much energy as big ones. One of the first things we lose is impulse control. This rapidly spirals into a depleted state in which, after making lots of insignificant decisions, we can end up making truly bad decisions about something important.

In discussing information overload with Fortune 500 leaders, top scientists, writers, students and business owners, email comes up again and again as a problem. It's not a philosophical objection to email itself, but rather the mind-numbing number of communications that come in. When the 10-year-old son of my neuroscience colleague Jeff Mogil at McGill University was asked what his father does for a living, he responded, 'He answers emails'. Jeff admitted after some thought that it's not so far from the truth. Workers in government, the arts, and industry report that the sheer volume of email they receive is overwhelming, taking a huge bite out of their day not only in terms of answering them, but also prioritising which ones to answer. We feel obliged to reply our emails, but it seems impossible to do so and get anything else done.

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Questions 1–4

Do the following statements reflect the claims of the writer in the reading passage?

Next to questions 1–4 write

YES *if the statement agrees with the claims of the writer*

NO *if the statement contradicts the claims of the writer*

NOT GIVEN *if it is impossible to say what the writer thinks*

1 People are making greater demands on their time than ever before. _____

2 The smartphone has become an indispensible device for our careers. _____

3 People have incorrect beliefs regarding their ability to multitask well. _____

4 The maximum number of tasks the mind can deal with successfully at a given time to achieve a desired outcome is three. _____

Questions 5–10

*Choose the correct letter, **A**, **B**, **C** or **D**.*

5 Earl Miller uses the term 'cognitive cost' in the second paragraph
- A to imply that multitasking may result in us missing vital information.
- B to explain what actually happens in the brain during multitasking.
- C to demonstrate the speed with which we work while multitasking.
- D to suggest that multitasking adds to the time needed to complete a task.

6 What does the writer say about one particular hormone in relation to multitasking?
- A It causes people to lose their concentration.
- B It triggers a part of the brain used for practical activities.
- C It allows people to focus on several things simultaneously.
- D It acts as a way of slowing down the front region of the brain.

7 According to Glenn Wilson, 'info-mania' means people
- A place a strong emphasis on learning.
- B rise to the challenge of performing well.
- C find it difficult to resist the chance to multitask.
- D become less competent at what they are doing.

8 What is suggested by Russ Poldrack's research?
- A There is some overlap in the brain's zones.
- B Television plays a useful role in education.
- C There are benefits to doing uninterrupted study.
- D Some people are better than others at recalling information.

9 What does the writer say about decision making?
- A The brain has the ability to distinguish between big and small decisions.
- B The brain struggles to deal with the questions involved in making a decision.
- C We often make mistakes when it comes to making decisions about minor matters.
- D We need equal amounts of brain power to make major and unimportant decisions.

10 Which problem concerning emails does the writer mention?
- A the quantity that has to be dealt with
- B the difficulty in deciding when to respond
- C the guilt experienced by failing to write a reply
- D the boring nature of this type of communication

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