The Myth of Multi-Tasking

A review of
The Organised Mind: Thinking Straight in the Age of Information Overload
by Daniel J Levitin
Plume, 383pp.

Dan Levitin is a professor of psychology and behavioural neuroscience at McGill University. In this book he not only provides a guide on how to cope better with the hyper-flow of information; he also explains the science behind why our brains can handle and organise only so much information.

Considering the exponential increase in the amount of information contrasted with how the brain has evolved to deal with a much lesser amount, it's not surprising that we can feel overwhelmed. Our bandwidth for conscious attention is estimated to be 120 bits per second and just listening to someone speaking to us requires 60 bits per second of processing. This number explains partly why multi-tasking has proven to be ineffective despite some people claiming it as an attribute. Levitin explains the pitfalls of multi-tasking by reference to the hormones that are released - the constant switching of attention induces cortisol (stress) and adrenaline (fight or flight). However, the reason multi-taskers like it is because of the accompanying dose of dopamine that rewards the brain for losing focus.

Brain research shows that we operate principally in two attentional modes - either a stay-on-task mode or a mind-wandering mode, and at any one time we are in one or the other. The default mode is mind-wandering and is a state where we are most relaxed and creative. Thoughts move around seamlessly and connections are made such that solutions to seemingly unsolvable problems appear from nowhere. Most people will have experienced times when taking a break or going for a walk result in finding a solution despite no longer being focused on the task.

When we switch to the stay-on-task mode, also known as central executive, it occurs because we consciously direct attention to something, or our attentional filter is activated and the switch of attention is automatic. Levitin's research has identified the attentional switch as being controlled in a part of the brain called the insula. Why information overload is detrimental, apart from the limited processing capacity of the brain, is because the constant attention-switching is fatiguing and insufficient time in the mind-wandering mode means less time for problem-solving and creativity.

Given the natural limitations of the brain, how can we adapt to the age of overload? Levitin provides practical suggestions interwoven with the research and stories of how highly organised people work. For example, in the absence of maps, human survival once depended on accurate memory of stationary things and landmarks such as lakes and fruit trees. Once things move from place to place, our spatial memory is of limited use and we tend to lose things or spend inordinate

amounts of time looking for lost things. The solution of course is to have designated locations for things, or keep duplicates where a thing needs to be in more than one place, and to accurately and systematically label places. This all takes effort upfront but the reward is rarely losing things. A side benefit is that our brains receive a shot of dopamine when we accomplish ordering of a system.

For those who counter that they are too creative to be bothered, Levitin lists many famous musicians who are meticulous in the way they organise and catalogue. He also points to interesting research on London taxi drivers who have to pass rigorous location tests using memory and as a result, the hippocampus of the typical driver is larger than average. He makes the point that tidy does not necessarily equate to organised as some people work easily amongst scattered yet organised piles. In such cases, they are still relying on spatial memory as they know exactly which pile to source for a particular document. However, the system fails if someone else needs to find it.

The concept of using lists, website bookmarks and designated places is that in doing so, we externalise work that the brain would need to do if we had to conduct a search or rely on memory all the time. By reducing the amount of mode-switching and search time, ideally we have increased capacity for more single task-focused work and more mind-wandering time.

The topics in the book are wide-ranging including the origin of writing, a history of filing, effects of sleep deprivation and working with probabilities in medical decisions. Levitin is quite scathing of medical practitioners' understanding of probabilities. He recounts once speaking with a group of surgeons regarding the risk of side effects from multiple biopsies. The risk from a single prostate biopsy was 5% and most surgeons believed that the risk remained at 5% for each patient regardless of the number of biopsies. In fact, the risk increases each time and for a person having 5 biopsies, the risk of adverse side effects increases to 23%. However, in one conversation, a surgeon told Levitin who is trained in statistical methods that the author didn't understand medicine and that "medical statistics are different from other statistics".

The book will appeal to those who are curious about how and why we organise things the way we do. While suggestions on how to better cope with information overload are integral to the text, it is much broader and more substantial than a self-help book. Have I changed anything since reading the book? Yes; experiments include using index cards for note-taking instead of notebooks, turning off email to focus on other tasks, keeping a fully stocked wash bag for travel so it doesn't require rethinking each trip, reorganising hard drive files and folders (ongoing), and next visit to a medical practitioner I'll be more circumspect unless they are trained in probability.

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