

Coping with Memory Problems

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You'd forget your head if it wasn't screwed on.

I've got the memory of a goldfish.

My memory's a sieve.

Memory lapses are such a part of everyday life that the English language is peppered with clichés to describe them. They are almost as much a feature of British conversation as the weather. When people share their embarrassing anecdotes about a failure to recognize a work colleague in the street, or describe the convoluted steps they had to take to avoid using the elusive name of an acquaintance in a chance encounter, they are almost always met with the reply, 'Oh I know . . . The same thing happened to me this morning/yesterday/last week.' And so these tales of memory difficulties appear to be universal and, perhaps, nothing to worry about. But for some people, these memory lapses happen too often and the resulting consequences are too problematic and embarrassing for them to just be dismissed as part of everyday life.

Confiding in close friends can often make us feel better about our problems. Even if there aren't any practical solutions to be had, we can usually derive a great deal of comfort from the feeling that somebody understands and empathizes with our situation. But when people try to express their concerns about memory problems, the frequent response of 'Oh that happens to me all the time' can leave them feeling even more isolated and anxious than before.

You may suspect that your memory lapses are out of the ordinary,

but getting other people to understand the worrisome extent of the problem can be very difficult indeed. When you are left to your own devices, all kinds of terrifying thoughts may run through your mind as to why your memory might be going downhill, with the frightening spectre of dementia often hovering on the horizon. Some people may find that they slowly withdraw from friends and family members as they lose confidence in their ability to remember and discuss past events, further increasing their isolation. The resulting anxiety, low mood and depression this generates often exacerbates the original memory difficulties and so a downward spiral of deterioration begins.

If you are struggling with memory problems yourself or are caring for someone who has memory difficulties, this book has been written to help you cope. It is divided into two sections. The first half of the book explains how memory works. Once you understand how something works, it's easier to see where and why the process may be breaking down and, if it is broken, how it might be fixed. Although people will often use the blanket phrase 'my memory is terrible' the brain uses many different mechanisms to store and retrieve information and, even in people with farreaching memory difficulties, not all systems are affected to the same extent. Each chapter in the first part of this book describes a different aspect of memory. Chapter 2 explains the importance of paying attention to new information in the first place. It may sound obvious, but if you have not paid attention to something, you have no hope of remembering it later. This failure to attend to new information underlies many common memory complaints.

Chapter 3 debunks some of the common myths about memory and explains why it is not surprising at all that you can remember events from your childhood with Blu-ray-like clarity, while what you did last Wednesday is swathed in an impenetrable peassouper of a brain fog. Chapter 4 explains why you never forget how to ride a bike, while Chapter 5 looks to the future and explains how we remember the things we need to do and the places we need to be every day. It's all about remembering to remember. Chapter 6 examines the ways we retrieve information from our long-term memory store and looks at some of the things that can get in the way and block this process. It's a lot to do with the way that the information was stored in the first place. This chapter also examines one of the most frustrating and ubiquitous memory complaints we hear in the memory clinic: word-finding difficulties or the 'tip of the tongue' phenomenon.

Chapters 2 to 6 explain how these separate memory systems work and describe strategies that you can use to boost your brain power and reduce the nuisance that failures in each area can cause in everyday life.

The second half of the book looks at some of the most common underlying causes of memory problems.

Throughout the book, reference is made to the hippocampi (plural). The word is taken from the French word for 'seahorses'.

The hippocampi are two seahorse-shaped structures in the brain that play a crucial role in creating new memories. There is one on the right-hand side and one on the left-hand side of the brain.

It is still possible to form new memories if one hippocampus is

damaged, but if both are damaged severe memory problems occur.

Generally speaking, large, plump hippocampi are an indication of a healthy memory system. However, there are many factors that have a detrimental impact on hippocampal health and that cause the structures to shrink. The second half of the book examines some of these factors and ways in which you can ensure your hippocampi stay as healthy as possible.

Mood, physical health and hormonal changes can all have a very significant impact on memory function. Chapters 8 to 12 explain these effects. It is well known that diet and exercise have a significant impact on physical health. More and more research now supports the fact that they have a significant impact on cognitive ageing too. A healthy diet and regular moderate exercise in middle age are associated with reduced odds of developing a progressive memory impairment in old age. Even in old age, when there are physical changes within the brain and some hippocampal shrinkage is inevitable, regular physical exercise can slow down and even reverse some of these changes. Chapter 10 describes some of the ways that you can maximize the health of your hippocampi. It's never too late to make beneficial lifestyle changes. Similarly, keeping mentally active may also help to keep memory problems at bay. Chapter 12 describes some of the exciting new research that suggests that the 'use it or lose it' rule applies to cognitive functions, just as it does to muscles.

Everybody's memory starts to decline as we get older. While scientific studies have shown that some of our cognitive abilities start to deteriorate from our mid-twenties (!), it is often in middle age

that people really begin to notice that their memory is not what it was. It can be difficult to know what is within the bounds of normality and what isn't. Chapter 12 explains the patterns that are expected in normal ageing.

For some people memory problems are a symptom of something more serious than just normal ageing or increased stress. Chapter 14, 'When to seek further help', describes some of the tell-tale signs that something more than just normal age-related decline may be responsible for the memory problems you or your loved one experiences, and offers some advice about when it may be appropriate to seek help and support from your GP.

There are no silver bullets when it comes to improving memory function. This, as you will see, is a recurrent theme throughout the book. The strategies that can be used to cope with memory problems can be broadly divided into three groups:

- 1 those that deal with the underlying problem;
- 2 internal strategies that you can use to exploit the way your brain works;
- 3 outsourcing your memory functions to external agencies to reduce the load.

The first group of strategies tackles underlying problems that are interfering with memory processing. There is a surprising amount that you can do, even if your underlying brain systems are damaged, to maximize your efficiency in this regard. (See Chapters 8 to 11.) The second set of strategies focuses on ways in which you can get the most out of your memory to try to maximize the likelihood that new information goes in and is properly processed in

the first place, and minimize the obstacles that might prevent you from recalling it fluently later. The final group of strategies involves taking the load off an overburdened memory system by using external aids (from the good old-fashioned calendar to the most complex interactive digital apps) to record your information and jog your memory for you. This three-pronged approach is unlikely to solve all your memory problems but it may go a long way to reducing the nuisance they cause in everyday life, and that reduction lies at the heart of coping with memory difficulties.

Part 1

HOW MEMORY WORKS

2

Are you paying attention?

Then we will begin . . .

There is a very famous psychology experiment involving basketball players and a man in a gorilla suit. In the experiment, students were asked to watch a video of people throwing a ball to each other and were asked to count the number of times the ball is passed from one player to another. There are two balls in play, so viewers have to concentrate reasonably hard to ensure that they don't get distracted by the other ball being passed around by a different team. At the end of the video the students were asked two questions.

1 How many times was the ball passed?

2 Did you see the dancing gorilla?

Halfway through the film, a man in a gorilla suit walks plainly into the centre of the scene, stops to do a little dance, centre-stage, and then ambles slowly off again. This is not a subliminal image, flashed on the screen for a few micro seconds. It is an unmissable part of the film. And yet 40 per cent of the students who watched the video completely failed to spot the gorilla. While their attention was so entirely taken up with counting the number of ball passes, they just didn't process the information that was clearly on

the screen they were so intently looking at.

About one third of the students who took part had heard about the study beforehand. They knew a gorilla was going to appear at some point and were ready and waiting. In addition to counting the ball passes they kept an eye out for the gorilla and easily spotted him meandering across the stage. However, even though they knew about the nature of the experiment, a significant number of these students failed to notice that one of the players left the game halfway through and that the background to the scene completely changed colour.

In another famous study, the experimenters were manning a reception desk. Whenever a new customer came to the desk and asked for information the 'receptionist' (who was actually one of the experimenters) would chat a while and then duck under the desk, ostensibly to retrieve a relevant information leaflet. Immediately afterwards an entirely different person (who had been hiding under the desk) popped back up with the leaflet and continued the conversation with the unsuspecting customer. Again, about half of the customers who unwittingly took part in this experiment failed to notice that the receptionist had changed.

This phenomenon isn't just limited to psychology experiments. It happens in everyday life too. In 2008, a family home in Manchester was burgled early on a Saturday evening. Not that unusual perhaps, except that the burglar stole items from the room in which the whole family sat watching a talent show on the television. Every member of the family was so engrossed by the programme that they all failed to notice someone coming into the room, taking

their stuff and leaving with it. YouTube contains a clip, viewed over a million times, of a young man playing 'Minecraft', a popular, addictive computer game. While he is playing the game his house is being burgled, but the young man is so focused on his computer game that he doesn't respond to the obvious sounds of the break-in for some time.

The psychology studies and these anecdotal stories tell us a lot about how we process information. It's tempting to think of our eyes, ears and brain as a kind of video camera, capturing everything we're exposed to in an objective, all-inclusive fashion. But in fact, everything we 'see' has already been filtered and edited by our brains, long before we consciously process the new information. All too often we see what we expect to see and just don't notice the other stuff going on around us. We have evolved this way for a purpose.

Take a moment now to really focus on your environment. Up until this moment you have (hopefully) been concentrating on reading this book. But listen. What can you hear? Chances are you will become aware of something that you were not aware of before, maybe a clock ticking or traffic noise, a computer whirring, or even the sound of your own breathing. Can you smell anything?

These noises and smells were there before, but you were not aware of them because you were focused on reading this book. Without

this in-built filter, it is extremely hard to concentrate on anything.

Everything distracts us from everything else. In 2011, neuroscientists in Canada coined the term 'bouncer brain cells' to describe the neurons that appear to decide what to let into our brains to process more fully. They recorded the cells 'lighting up' in the front part of the brain, as the bouncers blocked irrelevant information

in an experimental task. If this part of the brain is damaged or the bouncer cells don't form properly for one reason or another, each new element in our environment is given equal importance, and the brain soon becomes overwhelmed. Doctors believe that problems with these neurons could be the source of some of the symptoms of conditions like attention deficit disorder and schizophrenia.

And so, without us even being aware of it, our brains filter out the irrelevant stimuli in our environment and help us to focus on whatever we have prioritized for the moment.

This is the first stage in the memory process. To remember something, we have to have paid proper attention to it in the first place. When we are in an environment with several different things competing for our attention, the bouncer cells sometimes make a wrong call and we miss the important information. Even in a calm, quiet environment, we can be distracted by our own thoughts.

There is then no chance of retrieving something from our memory if it never got there in the first place. This may seem obvious, but a failure to attend to something in the first place underlies many of the most common memory problems that people experience.