

Would you want a super memory?

Catriona Morrison (University of Leeds) talks to mnemonists and those in the field as she considers whether it's a blessing or curse

As a psychologist, what made you pick your particular area? Why is it that we choose to specialise in health psychology, or social psychology, or cognition? One line of argument is that we're interested in what we're not very good at. This is certainly my motivation for studying memory: my own memory is absolutely hopeless. I have found myself, for example, called upon as a 'memory expert' to advise on the means by which we can boost our recall, and the next minute I'm racking my brains to remember where I've put my car keys. So I hesitate to be the one to write about 'super' memory, but my approach comes from a position of realistic modesty about my own abilities. This only makes me more fascinated about people with exceptional memories: how do they do it and what makes them special?

Mnemonists

One person who knows a great deal about super memory is the writer Joshua Foer, who wrote *Moonwalking with Einstein: The Art and Science of Remembering Everything* (2011). The book is the story of Foer's attempt to develop a super memory himself. It is a fascinating account of his journey from having a regular memory, like the rest of us, to competing in – and winning – the USA Memory Championships. Foer insists that he had a completely normal memory before he embarked on this venture and outlines in his book the techniques he developed in order to be able to memorise full packs of playing cards and random objects, in the correct order. This type of super-memory ability is known as mnemonics.

I asked Foer about what drew him to the subject of psychology in general, when he has no background training in it. 'Is there anything more mysterious and miraculous than the human mind?' he said. 'I can't imagine why everyone wouldn't want to know more about how it works.' And what in particular is it about super memory that had appealed to him? 'I had gone as a journalist to cover a strange contest called the United States Memory Championship, where people were performing unbelievable feats



of memory. They told me anyone could do it. I didn't believe them, until I tried for myself.' Foer says his goal was simply to find out whether it was indeed possible to train oneself to memorise huge quantities of information. As a journalist, he says, he is always after a good story, but when it all began, he had no idea how deeply he would get drawn into the world of competitive memorising.

In Foer's view, 'super memory', in the context of the sort of competition he was training for, is in fact something quite

narrow, and limited in scope. He points out that you are not increasing any sort of generalisable, underlying memory ability. Rather, it's about using tricks to make your memory work in more efficient ways. 'I'm sorry to report,' he says, 'that learning how to memorise hundreds of random numbers will not help you remember where you left your car keys.' So, no help for me there, then. But what is special about people like himself who have this capacity for extraordinary feats of memory? Remarkably, he suggests, nothing at all. 'I am utterly convinced that anyone can do it. It's all about applying technique and effort.' Foer's account of his own experience certainly suggests that this is the case.

Savant syndrome

There are, however, cases in which people have memory powers that are really quite exceptional and that they seem gifted with from the outset. There's been no attempt, for them, at memory training in the way there is with mnemonists like Foer. An important distinction is that the type of memory is quite different: while for mnemonists it's about remembering lists of words, numbers, playing cards, and so on, for people with savant syndrome their super memory skills manifest themselves usually as an especially keen ability in one particular area. Probably the most well-known of these is the calculation of calendar dates – the ability rapidly to work out, for example, what day of the week the 6 March 2028 will be.

Other individuals have been identified who have super memory for music, being able to recall tens of thousands of songs. Derek Paravacini, for example, has stunned audiences with his immense musical capacity, despite being blind and autistic. He needs only to hear a tune once to process it and be able to replay it on the piano, and it appears that music was the natural way for him to channel his energy and cognitive abilities.

It seems this 'savant' super memory is limited to a range of quite particular abilities: principally calendar dates, maths, music or art. Again, not much help with those elusive keys...

Highly superior autobiographical memory

Highly superior autobiographical memory (HSAM), originally labelled 'hyperthymesia' or 'hyperthymestic syndrome' is a condition that has only been properly recognised very recently, in which people exhibit extraordinary recall

of events from their lives. In a paper published by James McGaugh and his colleagues (Parker et al., 2006), the researchers report the case of a remarkable woman, AJ, who 'spends an excessive amount of time recalling her personal past with considerable accuracy and reliability'. Her memory recall is extraordinary, but to the extent that she finds it debilitating. She says, in a desperate missive to McGaugh and colleagues: 'Most have called [my super memory] a gift but I call it a burden. I run my entire life through my head every day and it drives me crazy!!!...'

AJ recently talked about her condition in a documentary for Channel 4 (*The Boy Who Can't Forget*). She quite plainly finds her memory powers to be dysfunctional and upsetting for her. For those of us who have the notion that perfect memory might be a blessing, AJ provides the opposite impression: her super memory has blighted her life.

The boy featured in the Channel 4 documentary, Aureilien Hayman, seems more upbeat about his super memory skills. 'It just seems like there's no gaps at all; I can just see it all' he says on the documentary, when given a random date that could be several years in the past. He is able to remember days and dates, the weather, what he ate, seemingly with little effort. It appears to be neither beneficial nor a burden.

This subject is not without controversy and has sparked a debate between McGaugh's lab and other prominent cognitive psychologists who are sceptical of the notion of special memory, at least as it is manifested by her. These psychologists argue that, rather than being an innate capacity, this type of super memory is a learned behaviour that any of us could develop.

However, McGaugh counters this suggestion and is adamant that the super memory demonstrated by the small number of people he and others have identified represents a genuine phenomenon. McGaugh told me: 'We have now identified several dozen subjects who are very highly superior to age- and sex-matched controls in remembering their autobiographical experiences.' The most recent study from their lab (LePort et al., 2012) details 11 such individuals. He points out that the sceptics' views are not supported by his evidence. 'The strong memory is restricted to autobiographical experiences. None of the subjects is a "savant" and although they remember dates associated

with events they do not do "calendar calculation". They are otherwise quite normal and lead ordinary lives.' So how to explain this phenomenon? 'We do not know the bases of the ability,' he says. 'Of course, we can all work to improve our memories. But it seems highly unlikely that HSAM results from such effort by HSAM subjects. The strong memory is specifically related to autobiographical experiences.'

Professor
Giuliana Mazzoni
at the University
of Hull is also
convinced that
HSAM is a genuine
phenomenon,
having studied the

case of Aureilien and others. So what explanation does she have? 'Nobody knows for the moment,' she told me. 'Superstrategies? Superattention? I don't think there is much relationship with other forms of superior memory, but for the fact that one way or another encoding must be superior in all those cases.'

So, that being the case, does Professor Mazzoni believe we could all work to improve our memories? Or is super memory something that we're born with, rather than something we can cultivate? 'That is exactly what we are currently working on, and there is no answer yet. While I started this line of research believing that we could all develop superior memories, after having examined three people with superior memory I start believing that these are really exceptional conditions that have not much in common with the rest of us – this is my current hunch.'

The functional nature of memory fallibility

So if we accept AJ's distress at her super memory, and think about our own shortcomings, what could be the adaptive purpose of not having an entirely true, video-like memory for our lives? In *The Seven Sins of Memory* (2001), Dan Schacter categorised memory failures and argued that they can, in fact, work to our benefit. He suggested, using arguments from a variety of perspectives, including evolutionary biology as well as psychology, that memory failures are not flaws in the sense that they stem from the adaptive features of memory. 'Memory's vices are also its virtues,' he concluded.

A key way to understand the value of memory within the human psyche is that it plays an important role in helping us form and maintain a sense of self. My own research (Morrison & Conway,

2010) suggests that autobiographical memory starts to emerge at the point in childhood at which children are beginning to form a true sense of their individual identity and their place in the world – when they start to be able to tell you stories about their lives. If it's true, as psychologists like Martin Conway have suggested (Conway, 2005), that memory and the self are essentially linked, then our record of our lives should serve to maintain a healthy sense of self – in which case, in view of our human weaknesses, it would be unhealthy to have an entirely accurate record of our lives (for this much I am relieved). Instead, a bit of healthy editing and shading is far better in helping us understand who we are, where we have come from and where we might be heading in the future. The primary role of autobiographical memory is helping us understand our place in the world, past, present and future.

Well then, at the end of the day I am the first to admit that my memory is highly fallible – but would I want it any other way? Many memory researchers are keen to promote the adaptive element to memory fallibility – actually, they argue, having a really accurate memory is not necessarily something that serves you well in life. This seems curious at first pass, and psychologists have work to do to figure out why this is so. On the other hand we know that our memories serve to help us sustain a positive sense of self: there are elements in all our lives that are better suppressed. Memory is self, and a completely accurate video-type account of my life is not one I'm sure I would like very much. So I'll forgo any hope of having super memory: it's fascinating, but not for me.

"it would be unhealthy to have an entirely accurate record of our lives"

reading

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