Jonathan Hancock

brilliant Memory Training

Stop worrying about your memory and start using it – to the full!

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Prentice Hall
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First published in Great Britain in 2011

ISBN: 978-0-273-74581-5

British Library Cataloguing-in-Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data
Hancock, Jonathan, 1972-
Brilliant memory training : stop worrying about your memory and start using it - to the full! / Jonathan Hancock.
p. cm.
Includes bibliographical references and index.
ISBN 978-0-273-74581-5 (pbk. : alk. paper) 1. Memory. 2. Mnemonics. 3. Recollection (Psychology) I. Title.
BF385.H2747 2011
153.1'4--dc22 2011009435

10 9 8 7 6 5 4 3 2 1
15 14 13 12 11

Typeset in 10pt Plantin by 3
Printed and bound in Great Britain by Henry Ling

For Lucy, Noah, Evie and Nate

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About the author

Jonathan Hancock taught himself to have a brilliant memory when he was still at school – to win a bet, and then to break two Guinness World Records. He was one of the first people to achieve the rank of Grandmaster of Memory and became World Memory Champion at the age of 22. He has since shown off his remarkable memory on TV and radio programmes around the world.

A graduate of Oxford University and former BBC radio presenter, Jonathan has published ten books on thinking and learning, acted as a memory consultant for broadcasting and telecoms companies and led training courses in business and education.

Alongside his job as a teacher in a busy city primary school, every year Jonathan works with The Learning Skills Foundation to run the national Junior Memory Championship.

A keen marathon-runner, he lives with his wife and three children in Brighton.

Author's acknowledgements

I'd like to thank Samantha Jackson, Rachel Hayter and the whole team at Pearson for their enthusiasm and support for this book from the start.

Thanks are also due to my agent, Caroline Shott, and to all the members of The Learning Skills Foundation.

And to my family: endless gratitude for the patience and consideration they've shown me during the writing of this book. They're a constant reminder of the fun, excitement and joy involved in laying down lasting memories, and my life with Lucy, Noah, Evie and Nate has given me so many rich experiences to remember and cherish.

Introduction

We used to believe that memories were made in our hearts. Then we discovered the brilliant brain, and the last few centuries have been spent trying to understand what's going on between our ears. But memory's on the move again. The more we try to pin it down, the more elusive it becomes. And I don't know about you but a great deal of my memory is now definitely in my back pocket.

Inside my mobile phone I have all the numbers I use regularly, plus access to online directories that let me track down anyone else I might need to call. The internet provides me with more information than I will ever have time to use, accessible wherever I am in the world. My phone itself holds lists of jobs to do, calendars full of important birthdays, daily schedules, email address lists, maps … The alarm reminds me to wake up in the morning, the voice-recorder allows me to gather information on the move and retrieve it at my leisure, and the camera helps me to record and relive any moment I choose in phenomenal detail.

And yet … I'm *so* glad I learnt to use my own memory power. It's changed my life, and I want this book to change yours.

There's never been a time when memory was more important. Thanks to the speed the world turns, the sheer amount of information hitting us from every angle, the increased demands on our time and energy, and the high standards we set ourselves for what we can do in a lifetime, memory is now a more valuable

commodity than ever before. There may be more tools to support it, but there's so much more going on to challenge it, and there's no escaping the fact that your memory is still crucial to your success in everything you do. But it's not just about coping, forgetting less, stopping the rot. It's about making very conscious decisions to use memory to be brilliant. Your confidence with memory goes to the very heart of who you are and what you can achieve.

I've had some wonderful adventures with memory. I taught myself to memorise playing cards to break world records, then learnt how to remember *anything* to win memory awards and competitions … and suddenly discovered a growing community of people fascinated by the latent power of the human brain. I found out about memory techniques that had been around since ancient times and which still worked today. In fact they were perfect for the modern world because they made it possible to remember at speed, under pressure, creatively, efficiently, enjoyably; and rather than simply remembering more, they revealed the importance of remembering *better*. Because these days it's not how much you can remember, but what you choose to do with your memory that really counts.

Anyone can have a better memory. It's an active skill that you learn and practise. Ancient civilisations were much more aware of the best systems and strategies, but there's no reason why you can't start using some powerful techniques immediately and get so much more out of your memory, however old you are and whatever your experiences of learning have been like so far.

You'll remember more – and do it faster, find it easier, be more accurate. You'll get more out of everything you learn, engaging with it on a whole new level. You'll see the advantages of putting your learning skills to work in areas you never thought of before, and enjoy benefits you didn't even connect with memory: better communication, improved relationships, stronger imagination,

sharper decision making, more confidence all round. You'll feel good about the future, know how to make other people remember you, and redefine your own opinion about what you can achieve – when you put your mind to it.

My pocket memory's good, and I use it every day, but the memory I've built for myself is what makes the real difference to what I achieve and how I feel.

I've written this book to get you started on your own memory adventure. I want you to see just what a difference it makes when you know what memory is really about, and how to use yours, *brilliantly*.

CHAPTER 3

Memory boosting

The difference between false memories and true ones is the same as for jewels: it is always the false ones that look the most real, the most brilliant.

Salvador Dali

In this chapter you will learn:

- how to train the thinking skills that will maximise your memory
- what we know, and what we don't, about the human brain
- the life-spans of different types of memory
- why you remember and why you forget
- new ways to start forgetting less and remembering *everything*

It's time to start using your brain better, to create artificially brilliant memories of everything. As you discovered in the last chapter, some of your current memory methods are paying off, so keep doing anything that helps. But you also need to try out new ideas – and you're about to take a very different approach to a whole range of learning challenges, examining what your brain does when it works best and starting to change your approach to match. Give everything a go, develop strategies and systems that suit your brain and your life, and prepare to feel your memory doing some new and exciting things.

Change your mind

There's a famous saying that goes like this: *if you always do what you've always done, you'll always get what you always got.* Albert Einstein once said that the best definition of insanity is doing

the same thing over and over again, but expecting the results to be different …

Chapter 2 identified the six key areas of thinking that contribute to having a brilliant memory. You're about to start using them all as you change the way you learn for ever; and so, to give you the very best chance of success, here's a mini training session for each one.

Concentration

To start training your concentration, why not try counting backwards at the same time as counting forwards? Out loud, count 'one, two, three …' up to ten, and at the same time *visualise* the numbers from ten down to one. So as you say 'one' you picture ten, on 'two' you see nine, and so on. Can you do it up to and down from 20, 50, 100? What happens when you carry out the two counts at different speeds?

You can also train your brain to concentrate with words. See if you can make up some meaningful sentences in which every word starts with the last letter of the previous one.

'I'm making good decisions.'

'After reading, get testing – go on, now!'

'How will Lisa and Diane enjoy your recollections?

It's a brilliant boost for your concentration, especially as you have to think of several things at the same time: the sentence so far, the last word, the last letter, the next word … And how easy do you find it to concentrate on something logical while you're also trying to be creative? To have a brilliant memory you'll need to be able to operate many different bits of your brain at once.

Organisation

You can easily start to train your 'organised thinking' skills. When you create memory sentences, for example, using the

initial letters of words in a list, get into the habit of reorganising them to make remembering easier.

Here's a list of different types of energy:

gravitational electrical heat light chemical kinetic

For once the order of the items isn't important, so why not organise them in a way that helps your memory? My wife's called Lucy, so I might decide it's useful to have her at the start of the sentence: *light* (L for Lucy). I could put *electrical* and *kinetic* next, to give me 'electric kettle'; and then what about reordering the last three words as *heat*, *chemical* and *gravitational*: '… heats cold gravy'.

Lucy's electric kettle heats cold gravy. It's a very memorable image. I can see it, touch it, hear it, smell it, taste it … and now I have a much better chance of remembering those six ideas, thanks to some careful organisation at the start.

Often, the act of organising information (focusing on it, exploring it, doing something with it) is enough to make it memorable. That's particularly true when you *categorise* rather than just rearrange, and it doesn't seem to matter what categories you use – even ones you invent.

Try it yourself. Read this list of Christmas presents and group the items into categories of your choice, real or imaginary. For example, there's a group of foods in this list and a set of round things; but maybe there are also 'the three things that Neil Armstrong tried to smuggle to the moon', or 'items in the President's pocket' …

ham robot watch vase torch perfume remote-controlled car aftershave wine tie bowl camera mug necklace cheese

Now cover up the list and see how much of it stuck in your memory. If your organising and categorising has worked, one

word should quickly trigger several more, and the categories themselves should be easy to remember because each one has several words to act as triggers. Which categories worked particularly well? If anything slipped your mind, how might you have connected it more memorably to the other items in the set?

Visualisation

As well as strengthening your visualisation skills, this exercise will provide you with a useful piece of memory 'equipment'. You're going to build yourself an item of mental furniture to hold your memories.

Visualise … a beautiful oak cabinet. It has two doors at the front which open to reveal three drawers on the left, three on the right, and two open shelves in between. See this piece of furniture as clearly as you can in your mind's eye. Walk around it, look at it from close up and from far away and build a very clear picture of it in your mind. Imagine opening the doors and checking that each drawer on the left is empty, then the top and bottom shelf, and finally the three drawers on the right.

Now you can put in some memories. Here's a list of eight countries that you want to talk about at a meeting, in this precise order:

France China Australia India USA Italy England Egypt

For each country, imagine you've been given an intricate little model of one of its famous buildings or landmarks. Then, gently and carefully, put the models into your cabinet: one in each of the three drawers on the left, one on each shelf, and then the remaining three models in the drawers on the right.

You might see yourself putting a model of the Eiffel Tower in the first drawer; then part of the Great Wall of China in the drawer below, followed by Sydney Opera House in the one beneath.

Carry on until you've visualised a model for each of the countries, and all eight models are safely inside. Practise seeing them in their individual spaces and as part of a whole collection of information.

And when you cover the printed list and open the doors of the cabinet in your mind, what can you see …?

Imagination

More than just seeing images vividly, you need to be able to transform them memorably in your mind. Imagination is at the heart of artificial memory; and the good news is that you can train it to be brilliant.

You can practise by changing dull, lifeless, forgettable information into something so rich and real that it already has a good chance of being remembered. You use your imaginative skills consciously and strategically to manipulate information, bringing it to life in your mind in unusual and ambitious ways.

Your next challenge is to change each of the following words into something that will excite your interest and activate your memory.

book coat tree car plate apple

As words on a page they're pretty flat and uninteresting – but your imagination will soon see to that.

First, play around with the size and shape of each object. The book could be the biggest in the world. The coat might be only just big enough for an ant to wear. Perhaps the car is the longest stretch limo in history; the plate octagonal; the apple flat enough to post under a door. Picture all the images in your mind's eye and get used to using imagination to make them special.

Next, add one unusual detail to each picture. Use all the five senses imaginatively. What's odd about the way the book looks?

What strange noise does the coat make? Does the tree feel funny, or smell of something, or even have a memorable taste if you imagine biting into its bark …?

Now use your imagination to make each item *do* something memorable. You could pick a theme: for example, how would they all fly, or dance, or talk? If you focused on flying, the car might use its doors as wings, the plate could be fitted with helicopter blades, and perhaps the apple would burst high into the sky like a rocket? Or, forget about a theme and make all the actions different, creating five very memorable items with their own individual skills.

After all of that, it shouldn't be hard to remember the five items – and not just the original words, but all the rich, imaginative layers of detail you added. Holding them in your mind in this heightened form boosts your memory, but it also gets you engaging more closely with the information, so that *remembering* it is just the beginning of what you can do.

Creativity

Brilliant memory involves creativity on a number of different levels. You pick and choose from a range of strategies. You find creative ways to organise, visualise and re-imagine information. You invent clever images to remind you of complex or abstract ideas. And, as a result, you start using your memory to *boost* your creativity. You're motivated and alert, thinking in pictures and patterns, and able to bring together knowledge, experience and a wealth of new observations and ideas to produce some truly creative results.

brilliant exercise

Practise your creative thinking skills by finding images to represent the following bits of information: random words picked from a dictionary. Use the way the words look, how they sound, any associations that come to

mind, and every other possibility that opens up when you inject creativity into your learning.

velocity total happy eighteen torque permission

What image 'says' *velocity* to you? A cheetah, a jet plane, Usain Bolt? And what about this particular word, which could be easily confused with 'speed' or 'fast'? Maybe the plane is jetting over *Velo City*, home to the fastest animals and humans on earth?

Total is another abstract idea, so perhaps you make it as bright and exciting as a telethon 'totaliser', getting huge cheers at it's used to announce the latest total; or just break it down into a cute little boy: 'tot Al'.

You might picture a happy hippie … 'a teen' becoming eighteen … whatever combination of real meanings, creative associations and clever word-play produces the image clues that your memory loves.

And what about some names? Here are five Roman goddesses. If you wanted to learn them, for a talk, a test, or just to strengthen your historical knowledge, you'd need to turn them into images – and you'd have to think very creatively to come up with the pictures to use.

Vesta Terra Ceres Minerva Venus

Is Vesta only wearing a *vest*? Is Terra acting like a *terror*? Maybe Ceres *cares*, Minerva works down a *mine*, Venus loves exotic *venues* …?

This creative interpretation of the material gets you well on the way to remembering it brilliantly. And when you've got your five images, why not spend a moment trying to organise them creatively, connecting them together somehow to keep them in your mind. Is there a clever way you could order them, categorise them, combine them into a single scene or link them into a story?

Humour

It's probably not possible to train your sense of humour (although you could explore some different types of comedy,

mix with funnier people and find more opportunities to relax and laugh), but you can definitely practise *using* comedy to activate your memory.

brilliant exercise

Here are two ideas to try. First, take the following famous names and put them into a funny story involving every kind of visual comedy you can imagine. Steal ideas from all the comedy films you've seen. Use slapstick, surprise, practical jokes, farce, coincidence, misunderstanding … anything you can think of to raise a smile.

Mickey Mouse Elvis Napoleon Madonna Harry Potter Dumbo Arnold Schwarzenegger Oprah Winfrey Dracula Pelé

Maybe Mickey Mouse slips on a banana skin and lands on top of Elvis in the middle of a song – and he jumps into a cupboard where Napoleon has accidentally covered Madonna and Harry Potter in custard …

Visualise the events being played out in front of a packed audience, and exaggerate the sound of their laughter at each moment of madness.

And as a second exercise, what would happen if your favourite comedian became your teacher? Choose a famous comedy star, past or present, and then imagine them giving you the following information (the directions your friend's just given you to the party tomorrow night). How would Bill Cosby, Charlie Chaplin, Joan Rivers or Laurel and Hardy tell you to go …

… up the hill as far as the church, then right on to the main road for 12 miles. When you get to the garage, take the next left, go past the factory, under the railway bridge and then right at the school. The house you want is number 88, with a blue door.

A key component of comedy is exaggeration, so make sure your chosen comedian supplies you with extreme examples of their distinctive style. Imagine them pulling out all the stops to find humour even in some dull driving instructions. How would they make them funny – and make you remember them?

British comedy star Al Murray says he finds it hard to remember new people he meets at parties. But when he's on stage, even working at speed and under great pressure to perform, he's able to interact with the audience and remember many of their names. He turns them into new characters for his act, finds comedy in their names, jobs, hobbies, opinions … and he can remember them all with ease. Making things funny simply makes them more memorable.

Your brilliant brain

You'll be getting many more opportunities to stretch these skills as your memory training continues. Your new approach to remembering relies on them. You'll be constantly exercising the core aspects of your thinking – and you'll need to, because memory is a complex process. We've been struggling to understand it for millennia, and exploring a little of the history now will tell you a lot about what you have to do to be brilliant.

Did you know?

Your brain is not only the most complex organ in your body, it is the most intricate object in the universe. It's not much to look at: grey in colour, wrinkled like a walnut and with the texture of a wet sponge. Around 75 per cent water, your brain weighs around 1.5 kilograms; and, although that's only about 2 per cent of your bodyweight, it uses 20 per cent of the oxygen in your blood – carried in 100,000 miles of blood vessels. If you could harness its electrical power, the human brain could light up a 10-watt bulb.

Lose it, and still use it

People have lost large chunks of their brain and still been able to function, their mental systems shifting and sharing tasks and finding new ways to operate. Head injuries can have remarkably specific effects on thinking, showing that certain mental abilities are controlled by certain parts of the brain; but neuroscientists have found different bits of the same 'memory' in very different places, and modern imaging techniques reveal the complex interconnections involved in the simplest of tasks.

We've learnt much more about how the brain does specific things, but we're still at the very edge of understanding how its tangle of systems becomes memory – and, especially, *where* the memories are made and kept.

Mapping the memory

We think that memories are processed and stored all over the cerebral cortex, the brain's wrinkled outer layer. The four lobes specialise in particular aspects of memory: the frontal lobes, for example, play an important role in short-term learning and co-ordinating memories, drawing on the past and planning the future; and the temporal lobes major in autobiographical memory. And beneath the cortex, key parts of the brain appear to have their own roles to play.

- The *hippocampus* is heavily involved in transferring memories from short- to long-term storage and specialises in 'declarative' learning, the things you can talk about, and memory for shape and space. In a disease like Alzheimer's, the hippocampus is often the first area to be damaged, leading to confusion about details, spatial disorientation and a general inability to form new memories.
- The *cerebellum* is located at the back of the brain, near the spinal cord. This area is important for storing procedural

memories and motor learning: skills involving good co-ordination and delicate control. These memories do tend to feel like they're stored in a different way from the rest: accessible without much conscious thought – and built to last.

- The *amygdala* has been shown to work with emotional memory, so if it's not operating properly you'll struggle to understand and process feelings. And emotions have a major impact on how memories are made and retrieved.

Memory is an extremely complex system. A lot has to happen for an experience to become a memory.

Short term/long term

Your brain is good at taking in information, but what happens next is less straightforward. We now think of 'short-term' memory as very short indeed. Your sense organs detect details, get them inside your head, and then the information is held on a very temporary basis in what's called 'working memory'. After that, *some* of it gets transferred to more lasting storage, 'long-term' memory – so training your memory involves learning to do four things well:

- gathering: using strong senses, concentrating and showing good attention to detail
- holding: having strategies for retaining information long enough to do something with it
- storing: taking ownership of the material, filing it effectively
- retrieving: knowing how to recover key bits of information, individually or in combination, for a variety of different needs

The vast amount of sense information you take in stays in your working memory just long enough to stand a chance of being remembered, thanks to some instinctive activities in the brain. Memory systems get to work to grasp hold of new material,

beginning the process that will lead to *some* of it being stored for longer than the passing moment … .

Holding sounds

Consider what happens when someone calls out their phone number to you. As you look for a pen and paper or your own phone, you're probably repeating the digits to yourself, either under your breath or in your imagination, keeping the fast-decaying information in your head for long enough to record it somewhere else. You're making use of your *phonological loop*.

Holding images

When you see a diagram or watch something moving you retain it as a picture in your head – for a while. This is your *visuo-spatial sketchpad* in action, and it also plays a role in planning movements. As someone gives you directions ('over the bridge, right at the traffic light, past the pub…') you're likely to create a mental picture and focus on it intently, trying to keep this imaginary map in front of your mind's eye.

Holding sequences

Your brain can integrate different sorts of information to form memorable sequences and structures, as words form into sentences, for example, or sights and sounds make up movie scenes. There's a limit, after which the sequence itself isn't enough, but up to that point you can remember 'the story so far' thanks to the natural power of the brain's *episodic buffer*.

All three of these systems are co-ordinated by the *central executive*, and together they provide you with the working memory that holds on to information in the short term. But there are some other important factors in play. Some things are simply easier for you to hold on to, and understanding *why* is a key early step towards boosting your brain.

Throughout the history of memory testing, word lists have been used to investigate individuals' particular abilities, as well as to highlight common experiences and effects. To make the most of the following powerful experiment, try your best to switch off any active memory strategies and then ask someone to read the word list to you out loud. Just listen to the words and see which ones your brain retains without any conscious effort from you.

box coat oven key shark pan Elvis Presley car hole whale laugh pencil sharpener modern octopus hat trophy grey murder rose pin starfish book firework toast seahorse barrel fast apple

If a computer was working properly, it wouldn't have any problem remembering these words. It could give them back to you forwards, backwards or in any other arrangement with 100 per cent accuracy, for ever. It wouldn't be put off by someone talking, get confused by previous word lists, be distracted between learning and recalling, lose energy or interest half way through … Of course it might not find it so easy to tell you what it was doing on the day Elvis was shot, list its favourite makes of car or describe the wonders of the smell of toast, but it could be relied upon to return whatever you put in, efficiently and reliably.

Human memory is different, as you can demonstrate now by trying to write down all the words from the list that stuck in your mind – and then spending a moment thinking about what happened in your head during and after the test.

You may lose in a contest of simple recall, but you're instinctively doing more than just regurgitating the data as you spot subtle patterns, prioritise particular words, make connections, form images, personalise the information … Your experience will be different from everyone else's, but there are also things in common that reflect some very important principles at work.

First and last

You're likely to remember words from the start of the list, like *box*, *coat* and *oven*. Your short-term memory had space, your brain was alert and you were interested in what was going to happen next. First impressions really do count: information gathered at the start of any learning exercise has a good chance of being recalled, thanks to what's called the *primacy effect*.

It's also easier to hold on to words from the end of the list. There may be 'interference' from the information that's come before, but there are no new words to overload your memory and not long to wait before you get the chance to answer. Your spirits tend to pick up towards the end of a learning session, adding to the power of the *recency effect.*

Surprise!

Information sticks more easily when it stands out in some way. It's another simple but incredibly powerful point. In this list, you were much more likely to remember the words *Elvis* and *Presley*: the only person – and a pretty outstanding one at that – amongst many mundane ideas. The next time you compose a shopping list, pick the two most important items, write them in larger letters using a different colour and style, and see if they're easier to remember. The *Von Restorff effect* says they will be. You could even add a completely inappropriate word somewhere in the list – *astronaut*, *banshee*, *Constantinople* – and see how quickly it comes to mind later on.

Sometimes, unusual information takes our attention from the other stuff and makes us remember less overall; but mostly, as advertisers, artists, comedians and the owners of brilliant memories know very well, details that stick out like a sore thumb stay *in* the mind longer than everything else.

Joined-up thinking

Connections are also incredibly powerful. In the list you saw, *pencil* and *sharpener* were clearly linked, as were all the sealife words: *shark*, *whale*, *octopus*, *starfish*, *seahorse*. Spotting patterns triggers memory and allows your brain to cluster the individual bits together, and 'chunking' is a well-known memory tactic: grouping information into more manageable bundles. So *12*, *24*, *10*, *16* isn't really any harder to hold in the mind than *2*, *4*, *0*, *6*, and *shoe*, *cake*, *banana*, *tree*, *elephant* is as easy at *s*, *c*, *b*, *t*, *e*. Your brain does it naturally all the time, but you can also start to do it consciously: learning guest-list names in pairs, for example, or organising your Christmas buying list into 'themed' groups of gifts.

Think about the other words you remembered. Some will probably be easy to picture, like *trophy* or *firework*. Others will evoke senses – *toast* – inspire an emotional reaction – *murder* – or simply catch your attention in some other way, perhaps connecting to something you're doing today or prompting you to notice an item nearby.

Eminently forgettable

And the words you're *least* likely to remember? They're the ones in the middle of the list, with nothing to make them stand out, no connections with other words, hard to picture, uninspiring, abstract … And how well that describes so much of the information you struggle to remember in real life! No wonder so many things never get any further than your short-term memory.

There were other tricky aspects of this learning task, more factors that a computer wouldn't have to worry about – like anxiety about failing, having little real motivation to succeed, only hearing the information once … And, once again, how often are these things true of your day-to-day memory attempts?

Left to its own devices, your memory will remember some things, forget others, follow typical patterns, behave inconsistently and inefficiently, surprise you, frustrate you … *but it doesn't have to be that way.* Now that you've spotted the key things that help and hinder memory, you can start putting the right conditions in place to achieve a much better level of success. This is your chance to make the most of your brain's complex characteristics, its connectedness and creativity. This is where you start to outperform the computer, using memory skills to explore information imaginatively and to apply it in ingenious ways. And all the while you're developing core aspects of your thinking that will help you do *everything* better.

This is where you start to take control.

Get organised

Far too often we struggle to remember information in its most forgettable form. A computer can either cope with a particular format or it can't, and tells you so; but most of the time we just push on and try to make material stick, however badly it's presented. Our brain does its best to break the task into manageable chunks and to find useable patterns – but having a brilliant memory involves a much more conscious approach. Like the ancient masters of the art of memory, you find a new design for your data: one that matches the way your brain works best.

Matchmaking

Even simple attempts at organisation can make a big difference. Suddenly the puzzle has fewer pieces, and it can even start to feel like it's solving itself, giving clues about what goes where. You can see this in action by re-reading the word list as a set of fifteen pairs rather than thirty individual ideas. Spend a few moments now looking through the information – basically, the

same list – in this new form, thinking about each pair as a single item. Even without much effort you'll find that your brain is picturing the two words combined in some way or spotting something that links them.

box, coat oven, key shark, pan Elvis, Presley car, hole
whale, laugh pencil, sharpener modern, octopus
hat, trophy grey, murder rose, pin starfish, book
firework, toast seahorse, barrel fast, apple

It should already feel easier. You've instantly halved the items and given your brain some much more memorable ideas: a 'car hole', a 'whale laugh', some 'firework toast' … Combining concepts like this also stops them being mundane and kick-starts your imagination, giving these fifteen items a much greater chance of staying put.

True, you've now looked through the list a second time – but in real life, re-reading information doesn't always make much of a difference. This time, see whether it's had any impact on your learning. How many of the thirty words can you remember now?

And to get a feel for the 'glue' your brain can use to hold the pieces together, see if you can remember what came after each of the words below.

box _____ fast _____ modern _____
whale _____ oven _____ grey _____
rose _____ firework _____ Elvis _____
shark _____ starfish _____ pencil _____
car _____ hat _____ seahorse _____

There's an active approach at work here, since you've carefully reorganised the original list; but it's also about *allowing* your brain to do what comes naturally. We're wired to ask questions, look for patterns, try to survive by working out what's going on – so throwing together unconnected items wakes up the brain

and challenges it to make meaning. Normally you might not concentrate much on words like *pan*, *toast* or *laugh,* but now it's hard *not* to imagine what a 'shark pan' might look like, a 'whale laugh' sound like, or what smell might emerge from some 'fire-work toast'.

Storytelling

When you give it a chance, your brain loves to tell stories, finding some sort of logic to structure separate pieces of information. There's a natural instinct to 'put two and two together' – and, in memory terms, when it does make five, that's even better! Unusual outcomes are the ones that stick in the mind, as long as there's some degree of method in the madness.

Oral storytelling helped us to keep hold of our shared history long before anything was written down. These days we have countless storytelling formats: poems, songs, novels, movies, adverts, anecdotes, instructions, video-games …

Throughout this book you'll see the power of stories to make anything memorable.

So, if you're sitting comfortably, here's a story about …

… a huge box packed with expensive fur coats. In the pocket of one of the coats you find an oven key, and when you use it to unlock a secret compartment in your oven you discover something unusual inside: a shark pan, full of great white sharks. One of the sharks is chasing Elvis Presley, but he manages to crawl through a car hole and escape, dodging all the cars that are also coming in and out through the hole. Just when Elvis thinks he's free, he hears the deep, booming sound of a whale laugh, so he hides behind a giant pencil sharpener – where he meets a very modern octopus who's also in hiding. In each one of the octopus' eight tentacles is a hat trophy, its prizes for winning a hat-making competition. Elvis looks carefully at one of the hat-shaped trophies and sees a strange image on it: a

grey photograph of a gruesome crime scene. He peels off this 'grey murder' and uses a rose-shaped pin to fix it to the starfish book he's carrying, pressing the flowery pin right through one of the beautiful starfish illustrations. But this makes the book explode, shooting fireworks made out of toast into the night sky, each firework showering the crowds below with toast crumbs. Someone decides to catch the crumbs in a seahorse barrel, and the seahorses inside start to eat them noisily, until a fast apple starts darting around the barrel and getting to the crumbs first …

It's a strange story. There's no logic involved in firework toast falling into seahorse barrels and being snatched by fast apples … but there is a clear set of connections at work, an explicable if decidedly odd chain of events, reminiscent of dreams. And if the images and ideas are strong and memorable enough, you should be able to follow them from start to finish – and rediscover the original thirty words along the way.

Remembering …

Put it to the test. Start by looking into the huge box, see what you find – and where the story takes you. How many of the thirty words do you know now, and how well can you remember the order?

See what happens when you try to recall the list backwards. The apple was fast in the barrel full of seahorses, catching toast from … what? Can you make it all the way back to the start of the story?

And what about answering specific questions about the details in between?

- What came after *sharpener*?
- What was the eighth word on the list?
- Which word came before *toast*?

- Which of these words was not on the original list: *hat*, *oven*, *candle*, *modern*?
- How many of the words ended in a vowel?

Remembering like this may seem silly to start with, but it *works*, allowing you to perform precise, controlled feats of recall. Suddenly, instead of just being thankful for whatever your brain happens to hold on to, you're taking active control – and reaping the rewards. You strengthen your concentration, kick-start your creativity, and develop a range of key thinking skills that will serve you well in many different tasks. And, above all, you get a glimpse of what it might feel like to be able to remember anything. If you can learn a list of thirty random words, backwards, forwards and inside out, what else might you be able to do?

… and forgetting

So would you remember the list tomorrow, next week, in ten years from now? Unlike a computer, your brain can perform brilliantly in a task like this one minute, then really struggle the next. While you're focused and motivated, and the memorable images and links are fresh in your mind, an amazing feat of recall is possible, and there's no reason why you couldn't practise every day, repeat the same learning activity regularly and keep remembering this list for decades to come. But if you didn't, the memories would almost certainly fade. Sometimes life can feel like a constant battle to hold on to information as it slips away like sand through your fingers.

And yet … some memories are there for the long haul. Some information goes through the whole memory process, starting as sensory inputs, being held in working memory and short-term storage, then getting filed in a much more long-lasting way, with no further need for repetition and rehearsal. Enough has been done to it to achieve something close to permanence.

I'll always remember …

A sound or a smell takes you back thirty years to a memory that's still as clear as if it happened yesterday. Your daughter's name is on your lips without a second's pause for thought. At the pub quiz, some bits of information pop out of nowhere, learnt long ago and just waiting for the right moment. And you know what they say about learning to ride a bike …

Of course, illness or accident can still cause problems, and everyone makes the odd mistake. Health and mood, time and place, distractions and diversions: there are many factors that can play havoc with even the most secure memories. But what's clear is that your brain can take some information and make it truly memorable. And when you understand *how*, you're another step closer to putting your memory under your control.

It's a simple idea, but a life-changing one. When you know what's involved in making lasting memories – and you're about to – you can start doing it whenever you want.

brilliant recap

- Training your core thinking skills is a vital part of boosting your memory.
- Memory is a complex set of systems involving many parts of the brain.
- There are clear patterns to remembering and forgetting in practice.
- Short-term memory is *very* short, but the crucial first step to learning anything.
- Memory techniques make the most of the way your brain works best.

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