How to Train Your Memory

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# Introduction

* **Why Train Your Memory** when you can write everything down on your phone or just do quick Google searches?

1. *Start Innovating:* Innovation relies on combining concepts and knowledge in novel ways to create new products and ideas
   * If all your knowledge comes from Internet searches and you don’t remember much, then the data is discrete and largely unconnected
   * You need synthesis to innovate
   * The more information you can hold in your memory, the more you have to work with in order to make informed decisions and come up with ideas
2. *Build Relationships:* Remembering someone’s name, together with some personal details, builds trust and rapport: people feel impressed and flattered that you have taken sufficient time and interest in them
   * Conversely, struggling to remember someone’s name is embarrassing and awkward
   * Check Chapter Six for names and faces!
3. *Strengthen your Mind and Get Smarter:*
   * Professor Mar Rosenzweig found that rats in enriched environments had larger cerebral cortexes than did rats in normal cages
   * The more you exercise your brain, the stronger it gets
   * Dr Tracy Alloway suggests that training working memory improves fluid intelligence: your ability to solve problems in novel situations
4. *Create and Recreate:*
   * When you recall information, you recreate the imagined scenes you laid down whilst memorizing
   * Involves your imagination and creativity – like daydreaming
   * Frederic Nietzsche: “A person’s maturity consists in having found again the seriousness one had as a child, at play.”

## What is Memory?

* **Procedural**: Physical skills like riding a bike or playing the piano. Non-conscious and acquired through repetition and practice.
* **Declarative**: Can be consciously recalled (“declared”)
  + **Semantic***:* Facts, figures, and concepts. The kind of material you see on exams.
  + **Episodic**: Events. These memories are easily and naturally stored.
    - Can you remember the most recent holiday you took or where you met your partner?
    - You stored these in perfect detail without having to learn them.
* *Most of the techniques we discuss involve converting semantic information into episodic memories*
  + Vividly imagined experiences are remembered as well as real experiences
* You have to review things at the right interval to be most efficient in going from short-term to long term
  + To frequently and you’re spending more time than needed, too infrequently and you’ll just forget
  + Chapter 9!

# Chapter 1: Linguistic Memory Systems

* This book mostly covers methods based on the use of imagination and association
* However, in some cases linguistic methods (what most people think of when they hear memory technique/**mnemonic**) can be useful
* There are four categories of linguistic methods:
  + Acronyms
  + Acrostics
  + Rhymes
  + Use of words to represent numbers
* These are effective but not infallible, we’ll look at potential weaknesses in each method

## Acronyms

* An acronym is when you take the initial letters of a phrase to make up a new word:
  + BBC: British Broadcasting Corporation
  + NATO: North Atlantic Treaty Organization
  + SCUBA: Self-contained Underwater Breathing Apparatus
* Common in the texting world:
  + OMG: Oh my god
  + LOL: Laugh Out Loud
* This is not new, TTFN (“Ta Ta For Now)” was popularized by comedian Tommy Handley in his 1940s radio show ITMA: “It’s That Guy Again”
* Every profession has it’s own acronyms, especially computing and telecommunication
  + ADSL: Asymmetric Digital Subscriber Line
  + JPEG: Joint Photographic Experts Group
  + HTML: HyperText Markup Language
* There are many TLA’s and FLA’s (Three Letter Acronyms and Four Letter Acronyms)
* Acronyms work because they shorten a complex list into a simple word that is easier for our minds to deal with
  + You can easily remember the North American Great Lakes with ‘**HOMES’** – Huron, Ontario, Michigan, Erie, and Superior
  + Of course, you need to know the names of the lakes first but the acronym helps bring them back to mind
* BODMAS: Brackets, Orders (exponentials), Division, Multiplication, Addition, Subtraction
* When Chambers was in primary school, a police officer would come in and teach kids about playing safely and not talking to strangers:
  + SPLINK:
    - Find a **S**afe place to cross away from **P**arked cars,
    - **L**ook left and right,
    - **I**f **N**othing is coming, start to cross,
    - **K**eep looking and listening
* A few years later, in secondary school learning French, he learned a lis of verbs that “take *etre* in the perfect tense” (I think he means words that take *etre* as auxiliary in the imperfect tense) by the acronym ‘DRAPER’S VAN MMRT’:
  + Descendre
  + Routrner
  + Arriver
  + Partir
  + Entrer
  + Rester
  + Sortir
  + Venir
  + Aller
  + Naitre
  + Monter
  + Mourir
  + Rentrer
  + Tomber
* He suggests the alternative “MRS VANDERTRAMP”, which is a very unusual name so easy to remember
* The point is that if you need to remember a list, try to arrange the items into an order that will spell out a silly-sounding word
* You can reverse the process too; to remember difficult-to-spell words, create a phrase from the letters and use it to remember the letters
  + E.g. “Because”: Big Elephants Can’t Always Use Small Exits
* You don’t always need a full acronym:
  + To remember that embarrass has two letter ‘R’s and two ‘S’s: “I turn **R**eally **R**ed when my **S**ister **S**ings”
* Desert has Sand (one s)
* Dessert has Sweet Stuff (two ‘S’s)

## Acrostics

* An acrostic is ‘a poem or other form of writing in which the first letter, syllable, or word of each line, paragraph or other recurring feature in the text spells out a word or a message’
  + The series of letters that the poem or writing spells out corresponds to the initial letters of the list to be recalled
  + E.g. My Very Easy Method Just Speeds Up Naming Planets
  + 🡪 Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune Pluto
* This is used a lot by med students to memorize anatomy, but their examples are too risqué
* Here’s an interesting example, I use the Indian Chieftain name SOH CAH TOA to remember trig properties, that’s an example of an acronym. As an Acrostic, you could have:
  + Senior Officers Have (Sine = Opposite / Hypotenuse)
  + Curly Auburn Hair (Cosine = Adjacent / Hypotenuse)
  + Till Old Age (Tangent = Opposite / Adjacent)
* Or:
  + Should Old Harry
  + Catch Any Herrings
  + Trawling Off America
* You can also do a different order (Opposite / Hypotenuse = Sine, etc.):
  + One Ancient Teacher
  + Of History Swore
  + At His Charges
* Some further examples:
  + **Geology:** The order of geological time periods;
    - Cambrian, Ordovisian, Silurian, Devonian, Carboniferous, Permian, Triassic, Jurassic, Cretaceous, Palaeocene, Eocene, Oligocene, Miocene, Pliocene, Pleistocene, Recent
    - *Cows Often Sit Down Carefully. Perhaps Their Joints Creak? Persistent Early Oiling Might Prevent Painful Rheumatism.*
  + **Botany/Zoology:** Remembering the classification system of:
    - Kingdom, Phylum, Glass, Order, Family, Genus, Species
    - *Kings Play Chess On Fine Glass Sets*

## What Could Go Wrong?

* **Problem:** One drawback for both acronyms and acrostics is that you don’t know which letter corresponds to
* If the same letter occurs more than once, you don’t know which word it might be
* E.g. This is an acrostic to remember increasing degree of resistance in electronic resistors, not that B could be Blue, Black, or Brown:
  + Bye Bye Rosie Off You Go (to) Birmingham Via Great Western
  + Black Brown Red Orange Yellow Green Blue Violet Grey White
* **Solution:** You can include one/some of the actual words you’re trying to remember in the acrostic
  + E.g. To remember colors in the visible spectru:
  + *Violets* In Boxes Give You Odours Rare
  + *Violet* Indigo Blue Green Yellow Orange
  + Or in reverse: Read Out Your Green Book In Verse
* **Problem**: You might paraphrase instead of recalling the exact wording
  + E.g. to remember the lines of the treble music staff EGBDF
  + Every Good Boy Deserves Fudge
  + You could just misquote “All Good Boys Deserve Fudge”, which would give AGBDF
* Acrostics are good for list-based information that you need to remember
  + E.g. To recal Meredith Belbin’s nine team roles in *management theory*
  + Teams Can Sometimes Seem Complete If People Make Relationships
  + Teamwork Co-ordination Specialist Shaper Completer/Finisher Implementer Plan Monitor/Evaluator Resource investigator

## Rhymes

* The tune, rhythm, rhyme and intonation give your brain extra association to help memorize words
* E.g.
  + Thirty days hath September,
  + April, June, and November,
  + All the rest have thirty-one,
  + Except February alone,
  + Which has but twenty-eight days clear,
  + And twenty-nine in each leap year
* E.g. ‘In 1492, Columbus sailed the ocean blue’
* Can be used for almost any subject
  + E.g. “If you need a round hole repaired, the formula is
* Google:
  + “Richard Digance Sod’s Law” for a good example featuring the physical laws of Newton, Einstein, Pythagoras, and Archimedes
  + “Galaxy DNA Song” by Eric Idle and John Du Prez, written for the BBC series *Wonders of Life* with Professor Brian Cox.
* You can make up songs, verses or poems as a fun way to memorize complex information

## Representing Numbers

* If you need to represent numbers, there are methods in Chapters 3 and 5
* A linguistic approach is to represent each digit by a word with the corresponding number of letters
  + E.g. for the first fifteen digits of Pi (3.14159265358979)
  + “*How I need a drink, alcoholic of course, after the heavy chapters involving quantum mechanics”*
* You can’t have a word with zero letters, so use a ten-letter word for zero
* E.g. The square root of two is about 1.414, recall it with “*I wish I knew (the root of two)”*
* E.g. The base of natural logarithms € is about 2.7182818: “*To express e remember to memorize a sentence*”
* It takes ingenuity but can be an interesting exercise
  + We have more practical techniques later in the book

## Problem

* A major problem with linguistic mnemonics as a whole is that they don’t allow you to build on the basic information or add additional facts
* If you think about the acrostic for remembering planets (My Very Easy Method Just Speeds Up Naming Planets), you can’t add details of approximate sizes, if they have rings or moons, atmospheric conditions, colours, probes that visited each, etc.
* We introduce linking in the next chapter, which can overcome this