



Amazing facts about your brain...

and why it does weird things.

by
Tim Brownson

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Acknowledgements

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Thanks to [Naomi Niles](#) for design and Emily Metzloff for her awesome editing. She actually told me I could take out the typo reference at the beginning, but little did she know that I had a little bit of rewriting to do and may have added some back in. Sorry Emily!

Also thanks go to [Tony Teegarden](#) for his help and support and [Stacy Stone](#) for some great advice regarding the launch.

About The Author

Don't worry, I'm not about to go all 3rd person on you here and say stuff like "Tim Brownson is a highly sought after Life Coach with clients all over the world...blah blah blah."

It is true but I'm not sure you give a damn about that, so let me throw some bullet points out just in case you are interested in my background.

Feel free to either read or scroll past at your leisure:

- I am a Life Coach and I have been working as one since late 2004.
- I did my certification training in the UK and went full time in May 2005 and have since worked with hundreds of clients from all over the world.
- I am fairly well known for my work on core values and the process that I developed to help get clients unstuck.
- I am also a certified Hypnotherapist and an NLP Master Practitioner (twice over).
- I studied stress management at Sheffield University in the UK.
- I am the co-author of the book How To Be Rich and Happy, which has been published in countries as diverse as China, Germany, Taiwan, Canada (Quebec), Netherlands and France.
- How To Be Rich and Happy is self-published in the US because we have retained the rights and are using the money we make from sales to give free copies away to good causes.
- At the time of writing we have distributed over \$300,000 worth of hard copies of the book.
- I have a very British sense of humor that hasn't changed even though I now live in Central Florida.
- I've never met the Queen and no, I don't know Bob from London or want a cup of tea, thank you very much.

Thanks for reading, now on with some lovely brain stuff.

Foreword & Disclaimer

I am not a neuroscientist, nor am I a brain expert; I am merely a Life Coach who is fascinated by the human brain, both its limitations and its amazing ability and untapped potential.

This book is for entertainment and to a certain extent educational purposes. Please do not remove your brain to see if what I am telling you is true; that would be silly, almost as silly as emailing me to tell me you spotted a typo or two - deal with it.

I have done a lot of research to make sure the facts are indeed facts. However, it is possible that I may have stumbled on some bogus research. Doubtful, but possible, so please don't e-mail me to say that the brain can only last 9 seconds without oxygen and not 10, just grin and bear it along with the typos.

I have a tendency to swear. I know, I know, some people think it's totally unprofessional, but that's just how it is. If it's likely to offend you, please don't read on because I don't want you having palpitations. I realize I could take the few offending words out, but that would be inauthentic and if you read my blog you'll know I try not to do inauthentic.

If you find the following information useful or fun to read, I would love for you to forward it on to anybody that you think can benefit from it.

If you have received this from a friend or family member, you can get more of the same by going to my website and signing up for my newsletter. If you do that, you will be sent free-of-charge ebooks on topics such as goal setting, motivational quotes and dealing with stress.

You would also be a very welcome guest at the [A Daring Adventure blog](#) where I post about twice a week on self-development, life coaching, stress management and anything else I can think of that I think will add value to your life or make you smile.

If you're looking to hire your own life coach and take your life to the next level, then please give me a call on 407 334 4692 or contact me at tim@adaringadventure.com. I can also be hired for public speaking in the same manner.

Introduction - October 2012

I'd love to start this introduction by saying that I've always been fascinated by the human brain, but I can't. In fact my interest didn't really start until I started training to become a Life Coach.

Prior to then I realized people did dumb things (including myself) but I rather naively put it down to bad luck or blind stupidity and nothing else.

Until I started training in NLP (neurolinguistic programming) it never crossed my mind that literally every decision we make is made with the best intentions. It's just that sometimes a lack of information or a brain that can often seem to conspire against us, means that those best intentions can look foolish in hindsight and even cause detrimental results.

Your brain is both amazing and quite frankly, stupid. It can create a feeling of danger and anxiety where none should really exist (giving a speech or presentation is a great example), but equally it can warn you when danger is present when you were completely unaware of it at a conscious level.

Your unconscious brain can literally manage hundreds of tasks simultaneously. It's a plate spinning, ball juggling, multi-tasking genius. Yet your conscious brain starts to struggle with more than a couple of things and your performance degrades severely when you try and manage three or four things in your conscious memory at once.

The problem is, the newer part of your brain (the neocortex) which is responsible for planning, sensory perception, language, spatial awareness and conscious reasoning is in evolutionary terms, still very young. Whereas the reptilian part of your brain (the basal ganglia and part of the limbic system) has had a head start (no pun intended) of a couple of million years or more.

That is why when you come under intense pressure, you will tend to revert to reptilian responses (fight, flight or curl up into the fetal position and do nothing) that often make no sense in a modern society which is by and large far safer than we are often led to believe by the fear mongering media.

If you had met me at a party a decade or so ago, I'm sure you would have walked

away with the impression I was a bit of a miserable and pessimistic jerk. I would have happily pointed out to you how much my well-paid job sucked, how stressed I was and how unfair life was.

And your impression of me would hardly have been elevated if you had been able to hear the conversations that were going on inside my head.

I was giving myself a hard time most of the waking day. Every sale I closed meant I was lucky, and every sale I lost proved I was an idiot. And on the rare occasions I wasn't blaming myself, I was blaming others for my inability to be content and happy with my life.

Do you know there are over twice as many words in the English language for negative emotions and feelings than there are for positive ones? And that's not exclusive to the English language either because it cuts across all languages and all cultures.

You could hear that and be forgiven for thinking that human beings are a miserable, pessimistic lot at heart, but there's actually an excellent reason for the imbalance.

As Homo Sapiens we have been sharing this planet with all sorts of creatures that can eat, sting, bite, and even electrocute us for the best part of 200,000 years.

That's only really changed in the last few hundred years with the explosive growth of mankind. The accompanying deforestation and expanding urbanization wiped out or marginalized entire species that may have previously posed a danger to our existence.

As well as having to be wary of nasty creatures with big pointy teeth, we also had to ensure we did not bump into enemy tribes or annoy our tribal elders or peers and risk a lowering of our status.

The brain still thinks status is crucial to its survival because tens of thousands of years ago it was status that decided whether you got to stay in the tribe, who (or if) you could marry, and generally how secure and happy you were.

These days somebody unfollowing you on Twitter can be seen by your brain as a decrease in status, as can being turned down for a date or losing an online role-playing game. As such your brain can create a dopamine crash, and that's why those things tend not to feel good.

On the flip side, it can give you a pleasant dopamine rush by such things as gaining a promotion at work, getting your 15 minutes of fame on TV, and even something as seemingly inconsequential as winning a petty argument with a friend.

Unfortunately for society as a whole, most people feel a strong, albeit short-lived, surge of status through the acquisition of wealth, material possessions, and power too and I say unfortunately because that leads to greed and the lust for power.

We are living in remarkable times. It's sometimes difficult to see as we are so close to it, but there's little doubt that we are going through a technological revolution no less impressive than the previous industrial and agricultural revolutions.

There is one massive drawback with all this rapid change though.

It's your brain.

Unfortunately your brain cannot evolve at the same rate as technology without a lot of help from you utilizing tools like meditation and mindfulness.

That's because its default behavior is to cling on to the old way of doing things even when at a rational and conscious level your actions sometimes make little or no sense.

As I mentioned, your brain can, and often will, throw you into the fight or flight response even though you're only asking for a date or giving a presentation.

It can urge you to carry on eating even when you are full because it doesn't know when you will next hunt down dinner and/or you have developed a pattern of behavior from childhood after being told again and again to clear your plate because there are starving kids in China.

It can also create fears around people, animals, and inanimate objects that are often completely irrational at a conscious level. And I have to admit that I have been the "victim" of all of the above, courtesy of my prehistoric brain.

There is little correlation between income and happiness when somebody earns over \$100,000 per year. And what correlation does exist almost completely evaporates when you take that figure over \$250,000.

Most people understand this at a conscious level and you may even agree that it makes perfect sense.

However, that's your neocortex, or conscious mind agreeing. Whereas the dominant and infinitely more powerful unconscious part of your brain is really thinking,

“Yeah whatever buddy, I need a pair of Jimmy Choo's, a pool for my backyard, and a new Mercedes to raise my status, and I want them now!”

Why am I telling you this, you may be wondering? What has this got to do with you?

You my friend are a human being and as such you will frequently make irrational decisions that leave you shaking your head in disbelief. If you are like most people I know and coach, you will then almost certainly beat yourself up for acting inappropriately.

In almost seven years of life coaching I have yet to have one client tell me that when they beat themselves up about something, they consequently feel much better about life and never repeated the same mistakes.

Giving yourself a hard time just trains yourself to give yourself a hard time.

The reality is you are always doing the best you can. Even the worst decision you ever made was done with a positive intent. It's easy to look back on poor judgment and presume you were/are an idiot, but you're not, so give yourself a break.

You're doing the best you can with a brain that loves to make up stories and react according to stimuli that were developed many centuries earlier. You may have an iPhone running on the latest operating system, but you have a brain that's barely running on Version 1.21.

Hopefully after you have read this book, you will get a deeper understanding into your own psyche. You will realize that you're not an idiot even if your brain does occasionally make idiotic decisions.

You will also know more about cognitive biases and how you can avoid being caught up in them on a regular basis. Advertisers, marketers and (good) sales people understand cognitive biases and use them to sell to you. If you know what they are too, you will be in a much better position to avoid being ripped off or buying something you simply don't need.

Before we get to those however, let's take a look at some amazing facts about your brain so you can get a clearer understanding of how truly awesome it is.

70 Amazing Facts About Your Brain

1. You have a finite amount of willpower each day because to exercise your willpower you need energy in the form of oxygen and glucose. That's why it's harder to say 'no' when you are tired or not feeling yourself.

You can artificially boost your willpower by drinking an energy drink packed with sugar and caffeine, but a good night's rest is a much more useful and healthy option. Well, that and also having enough awareness not to put yourself into situation where you will need lots of willpower when you know your resources will be low.

In other words if you're trying to quit drinking, avoid bars. If you are wanting to lose weight, don't drive down fast food alley every day and if you want to stop smoking, avoid people (wherever reasonably possible) who do smoke.

2. A thought is a physical pathway in the brain. The more you have that thought, the more you groove and strengthen that path and the easier it is to have it again and again.

That's why having the thought "Why do I suck?" is never a great idea because you start to create a self fulfilling prophecy as it becomes harder and harder to shake the belief that you suck.

Your brain hates holding two contradictory opinions at once because it creates cognitive dissonance, so when you tell yourself you suck, your brain seeks out information to back up what you are saying. And trust me, it will find it and ignore contrary evidence.

And by the way, you don't suck.

3. Speaking of which, you have approximately 70,000 thoughts per day, although many will be the same ones looping round and round on your grooved cranial superhighway. And that is why we know that the quality of your thoughts is highly correlated to the quality of your life.

Think great thoughts and you're way more likely to lead a great life; it really is that simple if sometimes difficult to actually implement. As the great William James once said, "The greatest breakthrough in my life time is the realization that man can alter his life by altering his thinking."

4. Even if you consider yourself a creative right-brained person, your brain will increase blood circulation to the left of your brain side every 90 to 120 minutes, giving you a greater ability during those times to think linearly.

That's why even left-brained people can have times of the day when they are more creative and right-brained people can sometimes get their taxes in order.

If you want a fascinating tip on how you can tell which side is in control at any one time do this (unless you have a cold, in which case it probably won't work):

Close your mouth and take a deep breath through your nose.

Did you notice how your breath flowed up the nasal cavity more easily on one side than the other?

If not, do it again, only this time hold down one nostril and breathe in and then do the same with the other. One flows in easily and unencumbered, but the other probably feels like you have a bit of a cold.

That is due to vascular constriction and the side where the blood vessels are more constricted will allow air to pass through it much more easily.

Vascular constriction is controlled by the autonomic nervous system, which is one of the few parts of the brain that doesn't cross over. In other words, if your right nasal passage has constricted blood vessels, then so has the right side of your brain. Which means you that you are predominantly using the opposite hemisphere of your brain.

Cool eh?

5. Reading out loud to kids under the age of 5 accelerates their brain development and helps build neural connections. Those connections can then help with further learning as they grow older.

So don't throw your kids in front of the TV and turn on Sponge Bob Square Pants. Read them stories if you want them to grow intellectually and provide for you in your old age.

6. Scientists have proven beyond any reasonable doubt using fMRI's, that reframing negative situations literally rewires your brain by creating new neural pathways and can make you a happier, more easygoing person.

Very briefly and in case you are unaware, a reframe is where you decide to look at a negative situation in a more empowering light.

It doesn't involve changing the actual event (that would be delusional) just adjusting your view of it. If you want to get good at reframing, simply ask yourself the following two questions (or whichever is most pertinent at the time) when things aren't going to plan.

What else can this mean?

What can I learn from this?

7. Your brain is approximately 75% water, but you should never drink it, even if you're really thirsty, and anyway it probably wouldn't taste very nice.

8. Your brain only weighs about 3lbs, yet the greedy bastard uses between 20% and 25% of your energy supplies each day, so make sure you stay hydrated and eat high quality food.

9. There are approximately 10 to the power of 60 atoms in the universe. Your brain laughs in the face of that figure however, as it has 10 to the power of 1,000,000 different ways it can wire itself up.

That's the number 10 followed up with 1 million zeroes, which is to all intents and purposes (for anybody not called Stephen Hawking), is an infinite amount of ways.

10. Speaking of large numbers, there are approximately 1.1 trillion cells and 100 billion neurons in the average human brain.

11. A piece of brain tissue the size of a grain of sand contains approximately 100,000 neurons and 1 billion synapses.

12. The slowest speed information passes around your brain is approximately 260 mph.

13. A child builds up to 1 trillion synapses in his or her first year of life.

14. Your sensory system sends about 11 million bits of information to your unconscious brain per second. However, the conscious part of your brain is not aware of more than 16 to 50 of those bits and the lightweight can only deal adequately with about 3 or 4.

15. You are completely unaware of about 95% of the activity that is going on inside your brain. If you weren't, your brain would freeze up quicker than a Windows PC running ME.

16. If you don't take care of your brain, you can lose up to 85,000 brain cells a day and that's a large part of what causes aging. With appropriate forethought however, you can reverse that trend and slow the aging process.

17. Until relatively recently, scientists thought that the brain was the only area of the human body that didn't generate new cells. We now know that's not true and the brain does reproduce shiny new cells for you to use or abuse and lose (bearing in mind the last point).

18. If you lose blood flow to your brain, you will last about 10 second before you pass out.

19. Your brain has no pain receptors, which is why if I managed to remove the top of your skull without you noticing, I could poke around all day without you feeling a thing. The skull removal may hurt a bit though.

20. Even though we say the amygdala regulates danger, the cerebellum - motor control, and the limbic system - emotions etc, this is somewhat misleading as no part operates independently and all need other parts of the brain to get their job done to full effect.

21. Leaving aside degenerative brain disease, your brain never loses the ability to learn, change and adapt to new situations, because it's effectively plastic and constantly rewiring itself depending on the context.

Leopards may indeed not change their spots, but you're not a leopard and you can change, if you really want to that is, and your brain is up for the challenge whenever you are.

22. It's another self development urban myth that we only use 10% of our brain's capability. I once saw somebody on Twitter try to explain the Law of Attraction based on this faulty and quite frankly ridiculously outdated premise.

He suggested that if we can do what we can now using 10% of our brain, manifesting should be a breeze when we tap into the other 90%. Now he may be the exception that proves the rule and indeed may have only been using 10% of his brainpower, but he's not normal in that respect.

If you have any doubt whatsoever that you do indeed use all of your brain, cut a bit out and see what happens. Just don't sue me afterwards if you lose the ability to plan, forget how to tie your shoelaces, can't remember what your name is, fall over a lot or get angry for no apparent reason.

23. If you were to measure your brainwave activity you wouldn't see any drop off whatsoever when you're asleep.

You may be napping, but your brain isn't. It's still working hard pumping your heart, digesting your food, maintaining your blood pressure, processing the day's events, and much more to make sure you don't wake up dead.

24. Research has shown that the hippocampus, which is the part of the brain that deals with visual-spatial awareness, is larger in London Taxi drivers than normal people. London ‘cabbies’ have to spend months, sometimes years, learning literally every single street in the UK’s Capital before they are granted a license to rip off tourists.

This process is known as ‘The Knowledge’ and it literally enlarges that part of their brain. Unfortunately, it doesn’t help them with anger management issues when cyclists get in their way or stop them saying “South of the river at this time of night? That will be double guv’nor”.

25. Speaking of scientists getting things potentially wrong, there was a common belief that yawning was the body’s way of getting more oxygen into the bloodstream when it felt fatigued.

That may still be true; however, research conducted at Frontiers in Evolutionary Neuroscience suggests that yawning may also help cool the brain when the air is cooler outside the body than inside. Apparently this was based on studies that showed people in Tucson, Arizona yawned almost twice as much in the winter as they did in the summer.

This may seem like research to file under the “WTF are they wasting money on that for?” until you realize it may give an insight into diseases like multiple sclerosis and epilepsy that are accompanied by frequent yawning.

26. You have something in your brain called mirror neurons. If you see somebody stub his toe for example, the same pain area will light up in your own brain causing you to flinch.

Mirror neurons weren’t even known to exist prior to the early 1990’s, but now there is a growing belief in the scientific community they are responsible for us feeling empathy toward others.

27. When somebody takes cocaine, the pleasure center (nucleus accumbens) lights up and dopamine and serotonin are released. Fortunately, you don’t have to blow your life savings, act like a dick and lose your nasal lining to get similar results.

Giving to charity or helping people in need also activates the nucleus accumbens. Okay so maybe not quite as intensely but who cares because you're creating a real win/win and have no wish to spend most of your life in a bathroom?

28. The reason it's uncomfortable when people stare hard at you is because your brain automatically perceives it as a threat. A smile breaks that discomfort though, as long as it's a genuine, warm smile.

29. Your brain can usually tell the difference between a real smile and a fake one (which is why people that fake smiles a lot often look slimy) because there are muscles that you cannot control consciously and only come into play when you are truly smiling about something that makes you happy or warm and fuzzy.

Having said all that, you actually CAN fake a smile if you are skilled enough to fake the emotion behind the smile first so that even your brain thinks you're happy. Method actors and some politicians are adept at this, beauty competition contestants, not so much.

30. Multi-tasking is largely a self development urban myth and you probably cannot do it efficiently no matter what manufacturers of smart phones and tablets want you to believe.

Actually that's not technically true because according to the University of Utah, there are a few people (about 2.5% of the population) who can do two things consciously* at once without seeing any degradation in performance. The term super-taskers has been coined for such people.

However, for most people all the brain is doing is going backwards and forwards very quickly and giving the illusion of multi-tasking. The reality is that performance is inhibited by this approach, not improved and doing just two things at once can reduce the performance of a Harvard Professor to that of an 8 year-old child.

* I do appreciate that you can do multiple things unconsciously at once such as driving and talking. (Not texting though, which is why you're 27 times more likely to have an accident if you are texting at the same time - don't do it, ever!)

31. Your brain is constantly lying to you when you have your eyes open because it cannot deal with every single detail that you're looking at. Your occipital lobe is constantly joining the dots with what it presumes is there based on small fragments of what it really sees.

32. Similarly, your brain doesn't record memories like video, as it would be easy to assume. It takes snapshots of the more important bits and then when you recall the event it guesses what happened in between based on prior experience and generalizing.

33. Your brain finds it very easy to create false memories largely because of the above and the fact that it spends so much time guessing what's happening.

When scientists exposed people to Photoshopped images of themselves at various events years prior, they were soon able to explain what they were doing and recall the event with clarity even though they were never there.

There will be events you blindly swear happened the way you remember, but never actually did. A sobering thought and one to remind yourself when you are about to get into a heated argument about how your spouse made a complete fool of himself after too many glasses of wine and fell on the Christmas cake at your parents.

I never did that! It's a false memory my wife created to explain frosting on my nose and a handprint on the cake.

34. Your peripheral vision improves at night, which is why airline pilots are taught to use their peripheral vision when looking for traffic.

35. Your brain is fairly poor at distinguishing between what's really happening and what you are merely imagining. Which is why horror films scare people and porn films, er...ahem, well you know what I mean.

It also partly explains why visualization works so well because it primes and trains the brain for future events without even having to leave the comfort of your own bed if you don't wish to.

36. Your eyes are constantly moving even if that movement is usually imperceptible to you. So you may wonder why the images you stare at are not jiggling slightly too. The answer is, your smart brain realizes what is happening and uses other objects in your visual field as reference points and keeps everything locked together and seemingly as one stable image.

However, if I threw you in a pitch black room with only a spot of light on one wall, you'd soon be claiming that it was moving. Without any other reference points your brain is no longer compensating and your natural eye movement creates the illusion that the light is moving when in reality it is static.

37. You may (or indeed you may not) know that you need to blink to clear away dust particles and spread lubricating fluids across your eyeballs to keep them functioning properly. But why on earth doesn't the world go black for about the one tenth of a second it takes you to blink?

This is similar to the fact that your brain makes up pictures from tiny fragments of information as previously discussed. Only this time your brain is clever enough to ignore the blink and maintain the image of what you were looking at prior to your eyelids closing.

38. Your brain is very poor at concentrating for long periods of time and needs to clear it's head so to speak about every 90 minutes or so.

Which is why if you're delivering training and you want to maximize results, you should steer clear of immersion training and allow people to take lots of mini breaks rather than one long break for lunch as is often the case.

39. The reason why some Chinese born people struggle to pronounce words like 'fried' is not because they can't be bothered to learn them, as I ignorantly and embarrassingly believed when I was younger. It's because no similar pronunciation is needed in the Chinese language.

Therefore, if they are not exposed to the English language before around the age of 3, that part of the brain is allocated to other purposes and thus their ability to form the word correctly is massively inhibited. It can be done, but it is very difficult, so don't judge them.

40. You spend roughly one-third of your life asleep. No human can go without it for more than a few days, which is why sleep deprivation is a weapon of choice for armies the globe over when trying to ‘break’ soldiers wanting to enter the special services.

But even though you spend so much time asleep and it has been the subject of thousands of scientific studies, we still don’t know a fat lot about it. We do know that it’s the time when your brain does a lot of its necessary maintenance work, including the production of chemicals needed to get you through the following day.

Also, several theories point to sleep as a state vital to memory and learning. It may help ingrain memories into long-term storage, and it also may simply give us some time off from our mental waking activities.

41. Your brain was disproportionately large compared to other organs when you were born. That’s why babies look a bit like aliens. Not yours of course, yours are cute, just other people’s babies.

42. Speaking of babies. Their most heightened sense at birth is touch and not their ability to scream, as you might imagine. For about the first 12 months, they do much of their learning through simply touching things, which is why over-the-top “baby proofing” a house isn’t always a great idea unless you want your kids to grow up thinking everything on the earth is made of foam and/or rubber.

43. There is a growing belief that human beings like Monarch butterflies have an inbuilt compass, although research at this stage is in its early stages and obviously that’s only women because men are clueless when it comes to such things.

44. Other research is suggesting that a gut instinct can literally be a gut instinct and that there is a mini-brain operating inside your stomach. Again the research is in its early days, but it’s a fascinating concept nonetheless.

45. Your neocortex (the weird looking bit on the outside of the brain) is only about as thick as a dinner napkin and is made up of 6 layers. However, if you were to pull yours out and stretch out the folds, it would be over 3 feet square.

Unfortunately your planning skills would diminish rapidly and your ability to put it back in properly would be less likely than assembling a bed from Ikea correctly without an intimate knowledge of Swedish and schematics drawn up by an excited 8 year-old.

46. Very strangely you are about 4 times more likely to marry somebody with the same last name as yourself. And I'm not referring to marrying another member of your family. Your brain just loves familiarity even to the point of preferring people with the same name as you. Weird eh?

47. And by the way that familiarity extends way past names. You are more likely to prefer somebody who does the same job as you, supports the same sports team, is the same nationality, belongs to the same club or group or even has the same type of dog.

That's why dobermans owners rule, yeh!

48. If you were to get up off the couch and sprint hard for 20 seconds or so, you would increase the workload on your muscles by about 100x. However, if you sat down with Gary Kasparov after recklessly challenging him to a chess match after one too many beers, no matter how hard you concentrated you'd only require your brain to increase its workload by about 1%. You'd also lose.

49. You're 40 - 60% more likely to buy food you can reach out and touch than food somebody describes to you or places behind a counter. The old fashioned sweet trolleys really do generate more sales and top restaurants know this.

50. You are far more likely to tip a waiter or waitress more if it's a sunny day because the chemicals released in your brain put you in a more genial and generous frame of mind. Having said that, the effect of this if you live in a really hot country where sunshine is the daily norm is minimized.

51. Speaking of tipping, you are a lot more likely to increase your gratuity to a waiter who has gently touched your arm as you were ordering. You may not have even noticed the touch, but your brain has and it has equated that touch with friendship and familiarity.

52. And even more on eating. Your brain associates elaborate words and descriptions with higher prices. Therefore it is happier for you to pay more for potato chips described as being dusted in cracked black pepper and dipped in sea salt than it would be for plain old salted potato chips. Almost unbelievably the same goes for fancy fonts in fancy restaurants that charge fancy prices. Spot an old English type of font and you'd better prepare yourself because you are being subtly guided to pay more than you may have expected.

53. The reason why rats can sometimes beat humans in certain laboratory tests is because they have no prefrontal cortex to plan with. So they listen exclusively to their unconscious mind and the associated electrical responses or gut feelings. Whereas humans can get all wrapped up in trying to plan their best way out of the maze and end up cheeseless.

54. There are over 100,000 miles of blood vessels in your brain. So if you pulled all yours out we could stretch them round the earth over 4 times. Unfortunately, you wouldn't be around to see your amazing achievement, but you probably would make the Darwin Awards, and that's no mean achievement.

55. Your brain doesn't want you trying to fly when you're asleep after you went to see Spiderman, so in effect it paralyses your body with a hormone designed to keep you from living out your dreams.

56. If you exercise your brain with puzzles, memory games and reading excellent self development blogs like A Daring Adventure you can continue to grow new neurons all your life. Unfortunately most people don't know this and thus presume aging equals cognitive decline and sadly create a self fulfilling prophesy.

57. As I alluded to already, what you eat affects the efficiency of your brain. A study of New York students showed that those who ate food filled with additives and artificial flavors were outperformed by about 14% by those who ate more healthily.

58. Whereas 30% of your brain is given up to vision and all that goes with that, such as spatial awareness, depth perception and recognition etc, your sense of smell is still the easiest way to create conditioned responses/reflexes or anchors as they are called in NLP because smells enter the brain completely unfiltered by your belief system, unlike other senses.

59. The reason blind people often have other enhanced senses is because the brain thinks “Huh. I guess we’re not using that 30% for vision after all, we may as well use it for something else” and thus builds new neural pathways for the other senses.

60. The reason you can’t tickle yourself is because your cerebellum knows it’s you doing the tickling and sends a message to the rest of your brain to ignore the sensation and refuses to laugh. The miserable bastard!

61. Don’t be too hard on the cerebellum though because it controls your balance and without it you’d make a drunken, 3-legged donkey on an ice skating rink look like an Olympic gymnast.

62. If you get really annoyed or angry, your limbic system has taken over your critical thinking and it can actually become impossible to access higher reasoning. Which is why some people can go postal and nothing anybody can say can calm them down.

Fortunately if you remove the source of their anger, the Limbic system returns to normal after about 20 minutes. So don’t count to 10 when you’re mad, count to 1,200!

63. It is thought that the brain issues the command to cry as a way of alerting others that we are in distress. It is also thought that crying is the body’s way of eliminating potentially harmful proteins and hormones, so maybe a good cry really does do you good.

64. When we get embarrassed we blush and some people then blush even more when they realize they are blushing, but do you know why the brain issues the instruction to the veins in your face to dilate? No, neither do I and nor do scientists. Like hiccupping, there is no known reason or benefit.

65. Unless you have done this test before, you'll probably fail miserably at counting the F's in the following sentence:

FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF YEARS.

There are actually six 'F's' but your brain will have struggled to spot the ones in the word 'of' as it tends to disregard that word for reasons best known to itself.

66. Your brain is so soft that you could probably spread it on toast if you were completely insane and liked eating human brains and dying all at the same time.

67. When it comes to the brain, SIZE MATTERS. The stegosaurus brain was about the size of a walnut. The adult human brain weighs about 1,300 to 1,400 grams. The average cat brain weighs only about 30 grams, which is why they're really not that very curious at all, they just sometimes seem that way when balls of wool are involved.

68. Worryingly 70% of college football players get at least one concussion per year. Concussions are not to be sniffed at or taken lightly because they are cumulative and can potentially lead to depression, suicidal thoughts and dementia later in life.

69. After about the age of 25 and just as we reach peak development, the brain starts slowly shrinking. Some research has suggested that the male brain shrinks faster than the female one (not a surprise to the female population).

70. When whole body scans are performed on people, the brain is so active, compared to the rest of the body, that it looks like a small, powerful heater, while everything else appears almost ghostlike.

How To Avoid Getting Ripped Off

As I said in the introduction I want to help you be more aware of cognitive biases, especially in situations that may cost you money if you are oblivious to what is going on.

Cognitive biases are like blind spots, a deviation from rational judgment if you will. We make decisions that we think are based on sound judgment when in reality they are not; our brain is effectively tricking us.

Worst of all they are incredibly hard to spot, and most people will deny they were influenced by them, which is in and of itself a cognitive bias, unless we are prepared and understand it. Sales people, advertisers, marketers and even politicians know this and they regularly exploit them for personal or corporate gain.

Rather than just compile a list of different cognitive biases, because Wikipedia does that, I'm instead going to tell you a story.

A cognitive bias is a fault or blind spot in our decision making process and we are ALL susceptible to them.

Scientists have found dozens of the little buggers lurking around in our cranial highway.

In this story Helena is confronted by some of the more well known ones and doesn't do very well in handling them.

You can't avoid cognitive biases altogether and you will make poor decisions based upon them.

However, if you are aware of their existence and can remind yourself in appropriate situations, you are far less likely to get caught, especially by people or organizations out to separate you from your hard earned cash.

Today we are going to follow a mythical woman called Helena as she goes to the mall, and we will see how easy it is for her to make mistakes if she is completely unaware of her cognitive biases.

For the record, Helena is in no way connected to my wife, Helen. It is purely coincidental that their names are so similar and they are both married to Life Coaches.

On arriving at the mall, Helena decides to grab a coffee. Whilst standing in line somebody comments on how nice her hair looks. Immediately somebody next to her concurs and before you know it there are half a dozen people nodding their heads in appreciation of her well-coiffured head.

Confirmation Bias, Negativity Bias And The Backfire Effect

Momentarily she feels pretty good about this as she wanders off, coffee in hand and a spring in her step. However, as she exits the coffee shop she thinks she hears a man mumble to a friend;

“I don’t like her hair, she looks like a witch who’s been dragged through a bush backwards by another witch.”

She is distraught and never stops to calculate the likelihood of a complete stranger saying something so bizarre.

The reason being, she was thinking exactly the same thing before she left home. She didn’t like the way that bastard Luigi cut her hair last time anyway, and this just confirms what she already knew; it’s a complete disaster.

Because the previous compliments contradicted Helena’s belief about her hair, though momentarily gratifying, were now dismissed out of hand because of the backfire effect. This bias actually and bizarrely causes people to strengthen their beliefs in the light of contradictory evidence.

In Helena’s case the one presumed negative comment took center stage kicking all the compliments in the arse and ordering them out of her memory.

Anchoring

Still fretting somewhat, Helena wanders into Macy’s and picks up a dress that attracts her interest. Seeing the \$299 price tag she puts it down thinking, “It’s not worth that much.” As she does so she realizes it’s a sale rail and everything is 60% off. Fantastic! She does a mental calculation and realizes it’s actually only \$120.

Little does she know the reason why stores use signs like:

‘Take an extra 60% off!’

Rather than just changing the sticker, these signs “anchor” customers to the higher price. Thus when they then compare the original price with the new reduced price, they are far more likely to think they have the bargain of a lifetime and make a purchase.

Car showrooms do exactly the same thing because nobody with a tongue in their head and the ability to say “is that the best price?” ever pays sticker price on a car. It is merely there to anchor you to the ‘worth’ of the car.

Note: This type of anchoring isn’t the same as the NLP anchoring that you may have read about on my blog.

The Interloper Effect

She eagerly heads for the changing room to try the garment on. When she has done so, she steps outside to check it out in the full-length mirror and the smiling assistant is standing there watching.

“Wow that looks really amazing on you: the purple spots and pink and yellow stripes really make your blue eyes pop,” says the clearly insane women.

Helena hasn’t noticed her fragile grasp on reality and she immediately buys into the interloper effect of thinking a third party will always offer honest and unbiased advice without prejudice.

Consequently she simply smiles and thinks “Yes it does,” whilst thanking the women.

Loss Aversion

As she is paying for the dress, a woman walks up behind her and not realizing Helena is buying it, picks up the dress off the counter and says to another customer;

“This is the one I meant for you to get”“Oh wow, you are right that is soooo me. I’ll take it!” says her friend

The woman picks the dress up and holds it against her body smiling. Immediately Helena goes into a mini fight-or-flight response as loss aversion kicks in and she sees her bargain slipping through her fingers.

For most people the pain of losing a bargain is out of proportion to the pleasure of finding it in the first place and this feels especially bad as her dopamine starts to crash.

“I’m really sorry” interrupts the store assistant serving Helena, “It’s already been bought by this lady” and motions toward Helena.

Helena smiles at the woman apologetically as she takes the dress off her and turns back to hand over her credit card.

The Endowment Effect (or Sunk Cost Fallacy)

A few moments later, Helena is leaving the store with her new dress when she is approached by the same woman.

“I’ll tell you what, I’ll give you \$200 for the dress in cash right now” says the woman as she starts to remove a wad of bank notes from her purse.

Helena looks puzzled and somewhat irritated and responds with, “I’m good thanks”

“OK, \$300 then,” says the exasperated woman waving cash at Helena.

“It’s not for sale” snaps Helena and walks off angrily.

If only Helena had known about the endowment effect that has the tendency to make people value goods they own more highly than similar ones that they do not. It’s why people can feel insulted by a low-ball offer for their home or car, even though it’s purely a business transaction.

If she had known, she could have taken a step back and realized that only 5 minutes earlier she had said to herself the dress wasn’t worth \$300 and she could have made a tidy profit.

Information Bias

A few minutes after walking away, she has a nagging concern that she may have made the wrong decision. She fishes the dress out of the brown paper bag and starts reading the washing instructions. “Phew” she thinks: “It is machine washable and not dry clean only, that’s a relief” and pops it back in the bag.

The problem is, that information was useless to her now as the woman prepared to pay her \$300 was long gone, but the information bias made her feel better nonetheless.

Impact Bias

Shortly after Helena heads back to her car, pleased with her day's shopping and knowing that the new dress would give her years of pleasure. She never stops to remember that she had thought the same thing about many other purchases, including her new car that she now wanted to change. Voila, impact bias has kicked in.

Unfortunately, with her mind elsewhere, she heads out of a different door to the one she entered the mall by and fails to notice her error. As she walks to where she thinks her car is, she realizes it isn't there and immediately starts to panic.

At the same time one of the prowling mall security cars turns down her aisle and on seeing the by now frantic Helena, pulls over to offer help.

False Memory Syndrome and Overconfidence Effect

She blurts out that her car has been stolen and asks the guy to call the police. He knows that people regularly forget which parking lot they used, as they all look the same to most people and asks her if she is sure. Helena insists she definitely left it right there and points to the empty parking bay.

The security guy tells her to hop in the car and he'll drive her to the office to make a report and call the police. He deliberately drives her the long way back via the adjacent parking lot and a sheepish Helena soon spots her car right where she left it.

Researchers have found under some circumstances that people, when claiming to be 99% certain of something, are wrong 40% of the time. We also know that many people have false memories and the vividness and certainty of a memory is no guide to be sure that an event ever really happened.

Post-Purchase Rationalization

Relieved to have found her car, Helena loads in her bags and sets off home. Almost immediately she feels guilty for spending so much money on herself when her loving husband is probably at home slaving away over a hot keyboard.

For a moment she feels a smidgen of buyer's remorse and considers taking the dress back.

Then post-purchase rationalization kicks in. After all, the dress was a real bargain; that much was obvious by the determination of the other woman to buy it off her. And anyway it will go fantastic with those \$250 shoes she bought in the last sale that she hasn't actually worn yet.

Not only that, but she works damn hard for her money and if she wants to pamper herself once in a while, why the hell shouldn't she?

Well Traveled Road Effect

At that moment her cell phone rings and it's her gorgeous and multi-talented husband asking when she'll be home.

"Oh I'll be back in about 15 minutes," she responds forgetting the 918 times previously she has driven that route it has never taken her less than 25 minutes, and 30 is more usual.

Ho-hum thinks her patient husband.

Conclusion

I think you can gather from the information you have just read what a complicated and truly amazing thing your brain is. Most of us take it for granted until it lets us down and then we just get annoyed with it.

In and of itself that is quite ironic because it's the brain that tells you to get mad with the brain.

You will have noticed I have steered clear of mentioning the 'mind' and there's good reason for that. Even with all the massive amounts of research and stunning progress that has been made into understanding the brain with the advent of PET Scans and fMRI's, we still know a fraction about the mind.

I read an awesome quote and please forgive me for forgetting who to attribute it to, but it went like this:

The mind is something that the brain creates because the mind told it to.

Now if you can get your head around that little gem without your head exploding, then you are a better person than I.

My hope for this book is several-fold.

- I wanted to entertain you and make you think about your brain, both its amazing potential and its undoubted limitations.
- I wanted you to realize that just because your brain tells you something, it doesn't necessarily make it so. It can and does mislead you, so be careful before you get into a marriage-ending argument over something you're sure you remember from 15 years prior.
- I hoped by highlighting cognitive biases (and by the way, there are many more than I touched on) you would be less likely to succumb to them and make poor buying decisions or get into arguments when you are blinded by a cognitive bias.
- And to be honest I wanted to grab a few new subscribers to my newsletter and maybe a client or two. It may not seem like it, but this book took me three months to compile and several hundred dollars to edit, design and then market.

I truly hope you enjoyed it and that I have whetted your appetite for reading more and gaining a deeper understanding about your own brain. Thanks again for reading; I very much appreciate it and I hope to see you at www.adaringadventure.com

Cheers,
Tim

