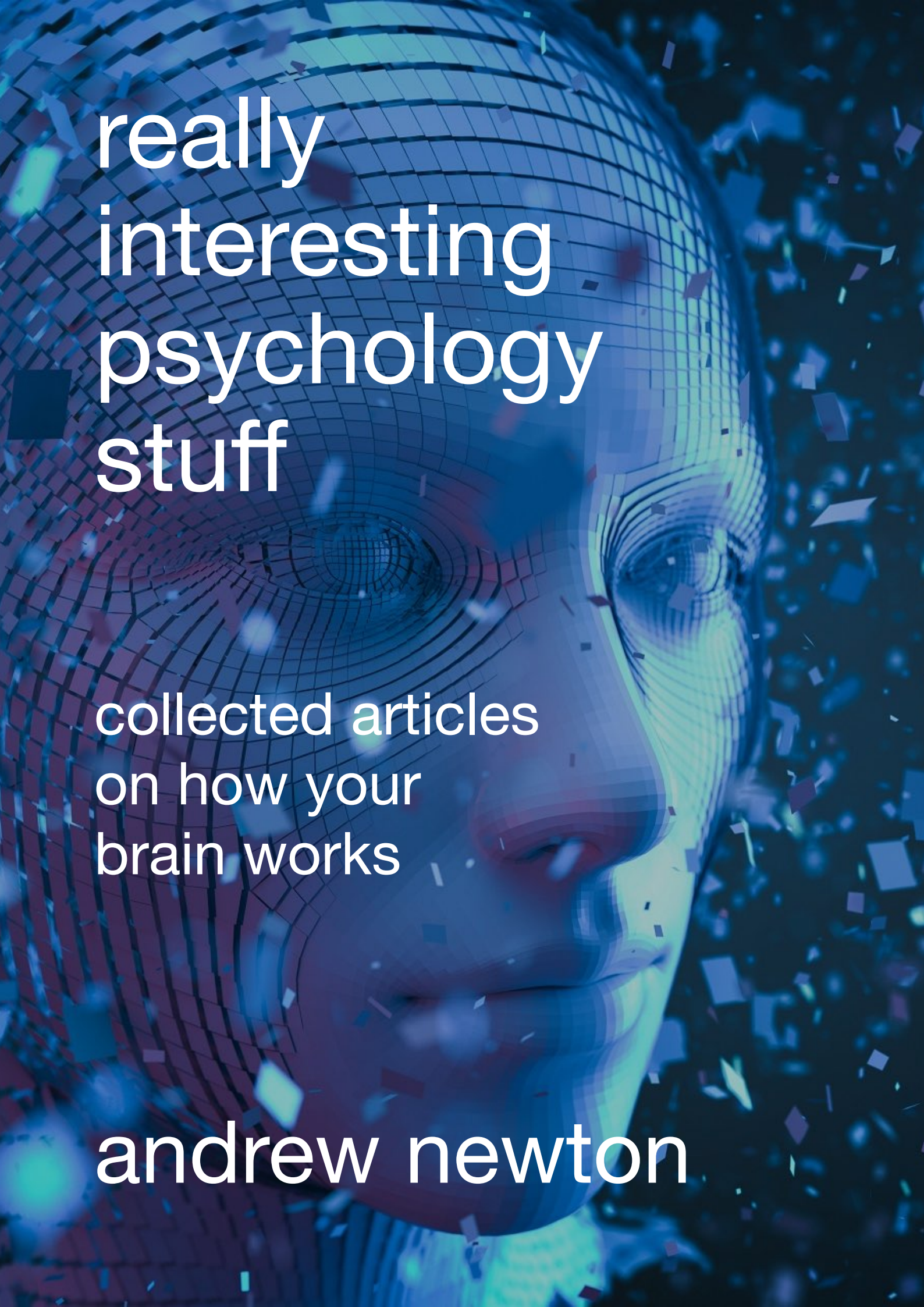


really interesting psychology stuff

collected articles on how your brain works

andrew newton

Contents

How storytellers helped shape society

Thousands of years ago, long before the advent of religion, our hunter-gatherer ancestors told stories to promote moral behaviour and co-operation among their tribes.

Children were encouraged to work with one another by these stories, rich in metaphor and understanding. Common themes were almost certainly about mutual respect, altruism and egalitarian values – long before the invention of gods.

Researchers from University College London's Department of Anthropology studied 300 members of the ancient Agta tribe, descendants of the first people to colonise the Philippines around 35,000 years ago and found that 70% of stories The Agta tribespeople live in scattered, isolated mountainous parts of the island of Luzon, and maintain many of the same traditions handed down over millennia.

70% of their stories focused on reinforcing and managing social behaviour. The concept of working together to achieve an end goal is instilled in the children of the Agta by the tribe's storytellers.

The research, published in *Nature Communications,* found that the moral lessons from the tribal elders pre-dated the similar teachings of religious groups. The tribes do not have moralising gods, yet they are highly co-operative towards the whole community.

One of the tribal children's stories was about the sun and the moon bickering over who should illuminate the sky. They settled the debate by agreeing to share the duty, one during the day and the other at night – the perfect metaphor to explain a puzzling phenomenon.

The promotion of sexual equality and co-operation between genders is common among hunter gatherer societies. Those kind of stories harmonise group behaviour and co-operation by providing individuals with social information about the norms, rules and expectations in a given society.

Around 300 members from 18 Agta camps were asked to choose who they would most like to live with. Skilled storytellers were nearly twice as likely to be nominated as other individuals. The study also discovered that skilled storytellers had on average 0.53 more children than those who were not skilled, showing the reproductive benefits of being a good storyteller.

Our brains are hard-wired to find problems

Why do many problems in life seem to stubbornly stick around no matter how hard you work to solve them?

It turns out that a quirk in the way human brains process information means that when something is rare, we tend to see it more.

Imagine for a moment you join the local neighbourhood watch, made up of volunteers who will call the police if they see anything suspicious. Imagine that you join the group to help them. When you first join, they raise the alarm when they see signs of serious crimes, such as assault or burglary. The groups efforts are rewarded by a fall in crime in the area.

One result of this would be that everyone would relax and stop calling the police because serious crime is now a thing of the past. Alternatively, you may start to look for things that *might* be suspicious – things you would never have cared about back when crime was high – a light on in house late at night, or someone smoking a cigarette on a street corner.

Problems never go away because we keep changing how we define them. This is called 'concept creep'. How can you possibly be sure you're making progress with a problem, when you keep redefining it?

To study how concepts change when they become less common, a group of volunteers were given a simple task. All they had to do was look at a series of computer-generated faces and decide which ones seem threatening. As the volunteers were showed fewer threatening faces, they widened their definition of 'threatening' to include a wider range of faces. Running out of threatening faces, they started find faces threatening that they had at first noted as harmless.

This kind of inconsistency isn't limited to judgments about threat. In another experiment, volunteers were asked to make an even more simple decision – whether coloured dots on a screen were blue or purple.

As blue dots became rare, people started calling slightly purple dots blue. They even did this when they were simply told that blue dots were going to become more rare. Even if they were offered a cash prize to stay consistent, they still went on to get it wrong. The experiment suggests that this behaviour isn't regulated by conscious conscious control.

After looking at the results of both experiments, the next step was to find out if this kind of concept change also happened with other kinds of judgment?

To find out, the researchers decided to ask volunteers to read about different scientific studies and decide which were ethical and which were unethical.

In theory, moral judgment should be more consistent across time than other kinds of judgment. After all, if you think violence is wrong today, you should still think violence is wrong tomorrow. But surprisingly, the experiment followed the same pattern. As the volunteers were shown people fewer unethical studies, they started noting a wider range of studies unethical, becoming harsher judges of what counted as ethical.

So why is it people can't help increasing the number of things they find threatening when threats become rare? Cognitive psychology and neuroscience research suggests that this behaviour is a consequence of the way our brains process information – we are constantly comparing what is front of us to its recent context.

Instead of carefully deciding how threatening a face is compared to other faces, the brain stores how threatening it is compared to other faces seen only recently, or compares it to the average of recently seen faces, or the most and least threatening faces it has seen. This method of comparison perfectly mirrors the pattern in all the experiments – when threatening faces are rare, new faces would be judged relative to mostly harmless faces. In a sea of non-threatening faces, even a slightly threatening face will are seen as threatening.

The reason for this is, astonishingly, that relative comparisons use less energy than absolute measurements. To understand why this is, think about how much easier it is to remember which of your friends is tallest, rather than exactly how tall they are. Our brains have likely evolved to use relative comparisons in many situations, because these comparisons often provide enough information to safely navigate our environments and make quick decisions while using as little effort as possible.

A neighbourhood watch volunteer who makes relative judgments will keep expanding their concept of 'crime' to include very minor transgressions long after serious crimes become rare. As a result, they may never fully appreciate their success in reducing the problem they're worried about.

From medical diagnoses to financial investments, modern humans have to make many complicated judgments where being consistent matters.

So… how can we train people to make more consistent decisions? One rather obvious step would be to make people more aware of the tricks their brains are playing on them. Maybe if the experiments were conducted again with a control group fully briefed on the phenomenon, would that change the results?

Further, maybe this change in perception is the reason why so many people now spend so much time searching for micro aggressions when many of the old prejudices have died out.

If you're making decisions where perception and consistency is important, maybe it would be a good idea to define your categories as clearly as you can. If you are tempted to join a neighbourhood watch, maybe think about writing down a list of what kinds of transgressions are worth worrying about before you start before you start calling the cops out for no good reason. .

This research was published in *The Conversation.*

Free will, and why you’re not in control…

Free will… it’s the control you exercise over your own life, depending on the relationship between yourself and Society's rules and responsibilities… But do we, as individuals, really think and act freely?

The great philosopher René Descartes [*Cogito ergo sum – I think, therefore I am*] reasoned that you have free will only if under identical circumstances you could have acted differently. Good old Descartes, he had such a way with simple words.

You walk into a bar and order Drink. You decided before you went in there that tonight, you are going to drink only in moderation. The barman pours your single brandy into a tumbler. Not a tall, straight glass mind you, but a short, wide one. You hear the clink of ice as it’s added to your favourite tipple before it’s placed – lovingly – on a coaster and slid toward you. But there’s a problem. Drinks served in tumblers fool your brain into thinking that you’re not getting as much as if your drink was served in a tall, straight glass.

It’s a simple optical illusion, and the result is that you drink more. Psychologists have done this experiment many times. People who get their drinks in tumblers drink more. So… what happened to your free will? I’m afraid it’s your own brain has screwed you over on this one!

You are happily married, secure in a loving relationship. Then one day at the office, you meet someone new, someone exciting, different, and attractive. Before you know what’s happened, you find yourself engaged in mild flirting. Then you share a joke via the office email, and then you’re timing your breaks so you accidentally on purpose set up the moment together you have been longing for all day.

Slowly you realise you can’t concentrate on your work anymore because you’re now counting the hours and the minutes before your 'chance' encounter (oh joy of joys!) at the end of the shift when you both walk out of the building together. Maybe you will go to some quiet bar for a drink. You become insanely jealous when if you see the obscure object of your desire talking to Kevin from Accounts.

Inside, you know it's wrong because you have a loving wife and two beautiful children at home, and yet... all logic and reason has flown out of the window as this woman takes possession of your every waking thought as temptation exerts an ever more powerful grip on your so-called free will.

The problem with free will is that it's a bitch of a mistress and harder to control than a pack of randy ferrets down a Yorkshireman's trousers. Nonetheless, the decision you are about to make, utilising your own free will of course, is about to change many lives.

Either way, your choice, the free will you are about to exercise, is gut wrenching – for you, for your family, and that includes extended family, friends of family and work colleagues. Your life as you have known it is about to cease to exist and it's going to cost you dearly in financial terms. There's also the risk that the obscure object of your desire – the most wonderful, beautiful woman in the world – might well dump you for her personal trainer some time in the future. You may as well resign yourself to your fate right now. Free will, free will… wherefore art thou?

What about the serial offender with a record as long as your arm, paraded through the courts on such a regular basis the court staff call them by their first names? The majority of them plead something along the lines of *'but I never had a chance, because my father was a wife beating alcoholic who abused me as a child and my mother was a drug addict who spent all her time at the bingo hall, when she wasn't on the game!'* Did he at any time as a result of his unfortunate upbringing have the opportunity to exercise his free will?

What about the heroin addict who promises himself that he really will go cold turkey... after just one more fix. What happened to his free will? Or the defendant who relies on that old chestnut 'diminished responsibility' as a defence? After all, he was suffering severe depression at the time of his offence. Did he have a moment to ponder his free will?

What about the ten year old child, riding his bicycle home, gunned down by warring drug dealers on a Liverpool street? Did he have free will? Or the millions of AIDS infected babies in Africa, or the starving millions, or the millions caught up in a civil war not of their making and where gang rape is an everyday occurrence, or the billion condemned to a life of never-ending poverty? What happened to their free will?

Or is free will purely a Western concept, reserved for the financially secure with a decent income that means all they have to worry about is which Mediterranean bolt-hole to rent a villa in this year?

They say that money doesn't buy happiness and that is undoubtedly true, but it does make most things bearable, and that's a fact! Wealth certainly has an effect on our ability to exercise free will, and for obvious reasons. A good friend of mine used to say whoever thinks money can't buy freedom is shopping in the wrong store. Maybe he was right. Or maybe just a little bit right.

Is it possible that the only constraints on free will are those that we impose upon ourselves? We all strive to live without constraints but that is not always possible. [I have always had a problem with pointless bureaucracy.]

We often impose constraints upon ourselves for the benefit of our fellow human beings. Most people don't abuse the environment by dumping their rubbish in a secluded country lane. Those that do could be said to be exercising their own free will, but to the detriment of others, in which case, has the perpetrator's free will been curtailed by lack of education or the kind of poor upbringing, which lacks social responsibility?

I do not believe that people can be excused bad behaviour simply because they 'didn't know any better' – everyone knows the difference between right and wrong, even if the only benchmark they have in life comes from watching repeats of Columbo. So much then for the way in which *their* free will is limited.

But what about the rest of us? We are all bound by rules and regulations, understandable in a modern and complex society because we need rules to protect ourselves and each other. We need the rules that protect our personal and civil rights, and rules that are at least designed to keep us safe in our beds.

We are constantly and consistently told by airport security personnel, by health and safety officials, by council jobsworths, that the decisions they make on our behalf, are *'for your own comfort safely and security'.* The problem is, what may seem on the surface to be reasonable, is actually an assault on our own ability to exercise our own free will. We are losing control and abdicating control to others. We acquiesce to this without the slightest consideration of the consequences because we are lazy and life in the West is so good, why rich the boat? We have become too stupid to work things out for ourselves or to make our own informed decisions.

The real problem lies in our inability to think straight. Freud thought of the unconscious as inaccessible to the rational conscious mind – that's the irrational unconscious mind, the repository of imaginary 'repressed' memories and inappropriate sexual fantasies about one's parents – a murky place, only to be visited if you're wearing rubber gloves. It's worth reminding ourselves at this point that Freud was a serial cocaine addict (he injected it) and that much of his wisdom turned out to be bollocks. One really should refrain from theorising about the darker recesses of the mind when you're off your head on drugs.

The unconscious exercises a greater degree of control over our conscious thoughts and actions than we realise and it has a disproportionately unfair influence on our actions and behaviour. However… the unconscious is also a place of super-fast data processing, an irreplaceable survival tool, honed to somewhere approaching perfection by millions of years of evolution and trial and error. Humans can instantly process almost any piece of information presented to them in a split second (think of a split second glance at a billboard as you are driving along). Most of our decisions are based on pattern recognition, rules of thumb, and previous experience.

The downside of this survival strategy however is that it encourages all sorts of 'isms' because of the unfortunate human tendency to pigeon-hole people according to skin colour, religious belief, cultural background and so on and then apply preconceived characteristics to members of groups. This is unfair, but it happens, and it serves to confuse the issue of free will even further. This is where the concept of Mindfulness comes into its own. Once people are informed of their inbuilt biases and the tricks that their unconscious mind plays on them, they can learn to use their conscious brains to recover a sense of perspective.

Claude Hopkins, advertising genius of the early 20th century, managed to change the behaviour of more people than any psychologist, philosopher or president. I know this next bit will sound crazy, but it's true! In the early part of the 20th century, most Americans did not use toothpaste! In fact, only about 7% of Americans owned a tube of toothpaste. A mere decade later, approximately 65% owned a tube.

Hopkins offered a reward for those who brushed their teeth – a beautiful smile! The Pepsodent campaign he masterminded was a roaring success. As was Hopkins' campaign for Palmolive soap. Millions of women all over the world switched to Palmolive, because, according to Hopkins, Cleopatra used it! The man was an advertising genius!

Once an idea has been established, it becomes habit-forming. Thus, our daily choices are more likely to be the result of unconscious habits rather than independent reason and free will.

One of the advantages of habits is that they make our lives more efficient. The downside is that they can also result in self-destructive behaviour, usually visible as predictable cycles.

Habits are wired into the brain, forming neural connections in the same way that water always follows the easiest course. There are things we can do to alter the course, but these require at least some effort. Alcoholics Anonymous replaces one learned routine (going to parties) with another (going to meetings). The problem with going to meetings rather than parties is that they don't open the bar.

The power of habit is up there along with the power of suggestion. It is all-powerful, it rules our lives, and all too often makes us vulnerable to unscrupulous thought-control merchants who pretend they are doing us a favour.

As if all this wasn't depressing enough, it looks as if our free will is constrained even further by something called 'confirmation bias'. Confirmation bias is largely a matter of which side you're on. Was that a tackle or a foul? It depends on where your ingrained loyalties lie rather than any objective examination of the facts or reasoned analysis of the off side rule. Confirmation bias is in us all whether we like it or not and we all gravitate towards our own cherished beliefs whether we admit it or not.

Confirmation bias is the main reason I am deeply suspicious of juries – apart from the obvious fact that anyone intelligent enough to serve on a jury has a job and is therefore not available for jury service. The upshot of all this is that people become the people they want to be, and worse, they also become the people they believe others believe them to be. Confused? You will be…

Just in case you still think you can remain in control, any idea of free will evaporates when you're under pressure. For instance, it's not the violence that affects your decision-making process – it's the threat of violence. Your brain is so busy running the fear programme that it completely forgets to override its lie-detection function. Conflicting and confusing information throw the whole programme out of kilter. Free will? It's gone with the wind.

And then there is that oldest and most formidable of enemies – your emotions. Emotions can increase your determination to keep flogging a dead horse, particularly when it comes to failed relationships, or ruinous litigation. This is called 'prophecy malfunction' and it's almost always bound to result in a stronger commitment to the 'cause'. It stems from a huge psychological investment – how can you cut such huge losses and start again from scratch? Belief is inextricably tied to emotion, which in turn, further frustrates free will.

And then there's 'cognitive bias modification', the source of all irrational fears and phobias, where the attention of anxious individuals is automatically drawn to threatening things around them, either specific or imagined. It is possible, with a little therapy, to eradicate the symptom by making the symptom itself the focus of attention. In the meantime, your free will is under suspension pending an internal inquiry.

And now for something particularly scary…

A common parasite called Toxoplasma Gondii may affect your behaviour. Toxoplasma is a relative of Plasmodium, the pathogen that causes malaria. It is shockingly common – in some parts of the world the infection rate is as high as 60% with whole populations affected. It has been known to damage immune systems and cause permanent change in behaviour.

The symptoms are not always apparent and are easily confused with other maladies. Sufferers have poor reaction times and one tell tale sign is that they are more likely to be

involved in road accidents which are their fault. There are high levels of neuroticism in populations affected by Toxoplasma, and infected persons suffer from short attention spans and display little interest in seeking out novelty. Infection increases the risk of schizophrenia. It's easy to see how these symptoms are easily mistaken for purely psychological imbalances.

According to Joanne Webster of Imperial College London, Toxoplasma's normal hosts are rodents and cats and the parasite passes back and forth between the two. Toxoplasma takes up residence in the small intestine. From cat faeces it can pass to other mammals and humans where they form cysts in the brain, liver and muscle. Toxoplasma infected rats and mice wander around as if they don't mind drawing attention to themselves, then the cat gets them and the whole cycle repeats itself.

Glenn McConkey at the University of Leeds in the UK has discovered that Toxoplasma's genes encode enzymes that are involved in the production of dopamine, the feel-good chemical produced naturally in the brain, which explains the odd behaviour of the rodents.

Dr. Fuller Torrey of the Stanley Medical Research Institute in Washington DC, in collaboration with Bob Yolken at Johns Hopkins University, discovered that people who suffer from schizophrenia were three times more likely to have developed antibodies to Toxoplasma.

Dr. Jaroslav Flegr of Charles University in Prague studied road accidents and discovered that both drivers and pedestrians involved in the accidents were also three times as likely to have been infected with Toxoplasma than safer drivers. The same results have been found by Professor Kor Yereli of Celal Bayar University in Turkey. Scary stuff, and scary stuff which exerts a direct effect on free will.

Shortened attention spans and longer reaction times are one thing, but researchers have also discovered a connection to a reduction in 'novelty seeking'. Seeking out new knowledge and experiences is part of the human development process, so it's worrying that Toxoplasma is so prevalent.

In 2006, Kevin Lafferty of the University of California Santa Barbara, published a paper which noted a disturbing correlation between levels of neuroticism established by national surveys in various countries and the levels of Toxoplasma found in pregnant women. (Pregnant women were chosen for the study because this is a group that is tested more routinely).

The French have a population infection rate of 45% compared to the British infection rate of just 6.6%. I noticed on a recent visit to France, shopping in both Paris and in Brittany, that French supermarkets were simply nowhere near as clean as British ones. Maybe they should bathe and shave under their arms a little more often.

So there you are – free will is something of a myth. Whether as a result of the actions of others, environmental factors like earthquakes and volcanoes, poverty, unscrupulous advertisers, nanny state government, evolutionary bias, or a simple microscopic parasite, Free will is almost non-existent. Accept it, get used to it learn to live with it. You'll be happier in the long run.

How brain structure & heartbeat affect your judgement

The structure of our brain controls our behaviour, but we think with our hearts more than our heads.

Most of the time, we think with our heads, but occasionally, especially in moments of distraction, we unconsciously switch to thinking with our hearts. We do this far more often than we realise, or care to admit.

Our heart rate fluctuates many times every day, even during calm conditions such as sitting or lying down – and these fluctuations can affect the way we think.

Without realising it, our heartbeat works hand in hand with our thinking processes to help us come to terms with and make reasonable decisions about social issues.

Scientists at the University of Waterloo, Canada, and the Australian Catholic University have tried to identify the conditions under which psychophysiology can affect the cognitive basis of wisdom and judgement.

They found that people who have greater heart rate variability and who are able to think about social problems from a distanced viewpoint demonstrate a greater capacity for wise reasoning. In other words, the physiology of the heart – specifically, the variability of heart rate during low physical activity – relates to less biased and wiser judgment.

There's a growing consensus among scientists that wise judgment includes the ability to recognise the limits of one's own knowledge, the ability to understand others' points of view and the ability to seek the reconciliation of opposing viewpoints.

Participants in the study were instructed to reflect on a social issue from a third-person perspective. People with more varied heart rates were found to be more capable of reasoning in a wiser, less biased fashion. But when the participants were instructed to reason about the issue from a first-person perspective, no relationship between heart rate and wiser judgment was apparent.

Specialists in this area already know that people with greater variation in heart rate show superior performance in the brain's executive functioning, such as working memory. But that doesn't necessarily mean that these people are wiser – some people may use their cognitive skills to make unwise decisions. In order to harness one's cognitive abilities for

wiser judgment, people with greater heart rate variability first need to overcome their egocentric viewpoints.

That particular study was published in the journal *Frontiers in Behavioural Neuroscience.*

Heart rate aside, researchers also believe that people who act impulsively and who are prone to thrill seeking may have less grey matter, that is, the wrinkly outer layer of the cerebral cortex.

Scientists led by Professor Avram Holmes of Yale University, together with researchers from Harvard and Massachusetts General Hospital, used magnetic resonance imaging (MRI) to scan the brains of more than 1,200 men and women aged between 18 and 35.

They measured the size and volume of specific regions of each participant's brain, and then compared them with the results of a questionnaire about their behaviour.

They were asked about their impulsiveness and their need for 'novel and intense' or sensation-seeking experiences, their willingness to take risks, and whether or not they were prone to making rapid and impetuous decisions. They were also asked about their use of alcohol, tobacco, and caffeine. None of the volunteers had any history of substance abuse.

The scans and questionnaires showed that people who seek high levels of stimulation or excitement – for example people predisposed to substance abuse or high adventure pursuits, or aggressive business practices, or even gambling – had reduced thickness in areas of the brain involved in decision-making and self-control.

They were also less averse to risk. Two specific regions – the anterior cingulate and middle frontal gyrus – the areas that regulate emotions and behaviour – showed the biggest differences.

The most pronounced of these were found where differences coincided with a participant's tendency to act on impulse. The relationship was just as strong in people who did not use drugs as those who did, showing that it is the thinner brain structure that affects behaviour and not the behaviour that affects the structure.

Other research has already confirmed that drug use can affect brain anatomy, and that genetics plays a part in thrill-seeking and impulsive behaviour.

The significance of individual variability in brain anatomy is still a matter of debate, but the findings allow for a better understanding of how variation in brain anatomy might affect temperamental characteristics and heath related behaviours and the possibility of predicting the likelihood of substance abuse in individuals, as well as risk-taking and impulsive behaviour.

The results of that study were published in the April 2017 edition of the *Journal of Neuroscience*.

The path of least resistance

The urge to find the easiest way of doing things with the least amount of effort is one of the reasons human beings have been so inventive.

Take the wheel for instance – how much backbreaking work has that simple invention made easier? The same applies to the printing press – an incredible labour saving device compared to a room full of monks copying out entire books by hand, bring knowledge to the masses, and… well, you get the idea.

Researchers at UCL Institute of Cognitive Neuroscience say this urge may be hardwired into our brains. They say it's so powerful it can change how we perceive choices to make the easier option more attractive.

To prove the point, 52 participants took part in a series of tests where they had to judge whether a cloud of dots on a screen was moving to the left or the right, expressing their decisions by moving a handle in their left or right hand.

When the researchers gradually added a load to one of the handles, making it more difficult to move, the participant's judgement became biased, causing them to unconsciously avoid the response that required the most effort. The participants were unaware the load was being added so this change in behaviour was a totally unconscious response – their motor system automatically adapted, triggering a change in their perception.

Dr Nobuhiro Hagura, who led the UCL team said '*Our brain tricks us into believing the low-hanging fruit really is the ripest'.* In other words, the tendency to avoid the option that involves the most effort affects decision-making.

Even when people were asked to express their decision verbally, they still chose the easier option. Therefore, the unconscious cost/benefit analysis will almost always influence behaviour in favour of expending the least effort.

Put succinctly, a gradual change in the effort of responding caused a change in how the brain interpreted the visual input and this change happened automatically, without any awareness or deliberate strategy.

Traditionally, scientists have assumed the visual system gives us perceptual information, and the motor system is an expression of that. In other words, our decision to act is based on what we see. It seems that is no longer always the case.

The researchers believe that our daily decisions could be modified – not just through deliberate cognitive strategies, but also by designing the environment to make these decisions based on the need to expend more or less effort.

Most behaviour change focuses on promoting a desired behaviour, but the UCL results suggest that people could also be made to see the world in predetermined ways, just by adding or subtracting the amount of effort needed to carry out a behaviour.

This is important work because it has ramifications for the ways in which we are unconsciously manipulated by advertisers and by governments. The phenomena is known as an ‘implicit nudge'.

I’d hate to think this could escape the laboratory, and be employed by people less scrupulous and more powerful than scientists.

What if a series of minor tweaks and alterations subtly changed the way the world looks? What would happen if the tiniest changes in our environment, in the things we watch on TV or look at online, also changed our perceptions just enough to change our behaviour? Could we be made to be more compliant? Could we be persuaded to buy things we don’t really need, or go to war for no good reason? Perhaps we already have…

Technology has already made us choose the easiest route to the detriment of our physical wellbeing. Technology means we can now access a massive amount of information or entertainment without getting up from the sofa. We’ve no need to walk to the record store or the cinema. We can peruse books online and even have a look inside without going to the library. We don’t even have to go to the shops anymore because you can get most things delivered within 24 hours. And in the aftermath of Covid, we are getting used to the idea of working from home.

We can check on our loved ones at the press of a button. We can eat restaurant food by having it delivered, we can shop online, and we can keep in touch with all our friends on WhatsApp and FaceTime. We no longer have to stop and ask directions if we get lost.

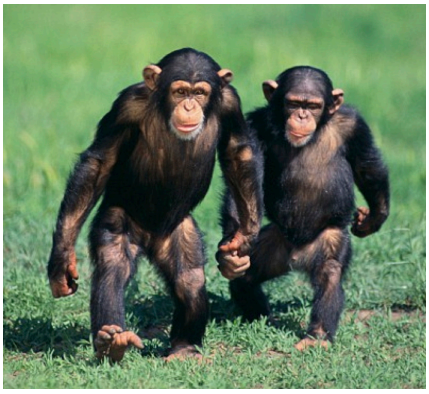
I’m writing this article without having to leave the house – all the information I need is literally at my fingertips. 20 years ago, I would have spent half my day in the library flipping through journals and using the photocopier at 10p per sheet.

I recently put together an article on Phone Separation Anxiety – there are literally hundreds of scholarly articles and references on Google, all instantly available at the press of the return key.

Sometimes I take my laptop to the library just to feel like I’m actually going to work. I take the long way round so I don’t have to climb the hill at the end of the road, then cut through the cemetery because I can’t be bothered to walk up the hill at the end of my street – following the path of least resistance.

Copycats

Why we can't help being influenced by others…



Researchers from the French National Institute of Health and Medical Research in Paris have confirmed that people unconsciously imitate their friends or associate's behaviour.

This makes sense – we are humans and our evolution is governed by our DNA – the purpose of which is to replicate and copy. We spend our formative years copying the behaviour of our parents, our siblings, and our friends.

We learn by imitating and copying other's technical and social skills. Now it seems that this need to copy carries on throughout our adult lives.

It has always been thought that personality is firmly established by our late-teens, but it now seems that personality might not remain set in stone and is not as ingrained as was previously thought. Our attitudes and thus our behaviour, can still be influenced by others a long time after our teens.

The researchers conducted experiments designed to study the behaviour of 56 volunteers. Each volunteer was asked to look at the decisions of fictitious participants whose attitudes were controlled by the researchers, following which they were asked to make a series of decisions involving risk, delay and effort.

- Tasks involving risk were set to study prudence. Participants were asked to choose between winning 90% of a small lottery prize, or a lesser chance to win a higher prize.
- Tasks involving effort were set to study laziness – participants had to grip a device at between 10% and 90% of their ability for either a low or high reward.
- Tasks involving delay were set to study patience – participants had to choose between a small pay out offered in three days and a higher pay out up to a year later.

The participants carried out each task several times. During the process they were told how a previous participant had performed, and their own responses were assessed.

The results showed that participants had a 'false consensus bias' – believing that the attitudes of others resembled their own.

They also followed a 'social influence bias' – their attitude becoming more similar to those of people around them. This is in effect, pure non-verbal suggestion.

The researchers believe that the social influence bias is partially determined by the false consensus bias.

Participants who weakly believed that the attitudes of others resembled their own, were more likely to imitate the actions of those around them.

Those who strongly believed that the attitudes of others resembled their own, were less likely to imitate others.

These biases, and the interaction between them, are indicative of a unique evolutionary mechanism that is ideally suited to learning both about, and from, others' attitudes.

This clashes with previous findings, which suggest that people modify their attitudes to conform with society.

There are all sorts of human behaviours that are contagious. People are predisposed to herd mentality – you can observe it in almost any social gathering – football matches, parties, concerts, even in the school playground.

We adapt to and learn from the behaviour of those around us.

If we mix with lazy people, we will make less effort ourselves – if we mix with people who have plenty of get up and go, we will ourselves become more enthusiastic and ambitious.

The same is true of impatience and prudence. It happens from a very early age and now we know it continues throughout our lives.

More important, we can observe how people's attitudes can drift imperceptibly but inexorably toward that of others – only 19% of those who changed their attitude were aware they had done so.

The research is published in the journal *PLOS Computational Biology*.

Battle of the sexes

Women, it was believed, had the upper hand emotionally, with more empathy and insight, while Men were more physically robust and better at giving directions. But these conclusions have been turned on their head as both men and women challenge the traditional boundaries of what either gender can achieve.

The once-feminine world of ballet is one example. Former prima ballerina Dame Darcey Bussell recently said male dancers are now better than the women, both physically and technically. 'I see incredible talent with the men nowadays and, actually, the girls coming through are finding it hard to keep up with the guys'. This makes sense as men are stronger than women, although generally speaking, heavier. But in a range of traditionally male-dominated fields, it's the women who are increasingly taking the lead.

Research has found women make safer pilots than men, and studies show women are more likely to survive a heart attack if treated by a female doctor. And let's not forget that the England women's football team is now ranked third in the world — one place higher than the men's. So, where do we — men and women — really stand?

Here's the science behind the new, improved battle of the sexes . . .

A study by the University of Tromso in Norway found that although women were more likely to read instructions for flatpack assembly furniture, men were at least one minute faster at assembling it. This could be due to men's brains being better at imagining objects and mentally rotating them in 3D. However… when it comes to hitting the nail on the head, it's women that have the upper hand.

According to researchers at the University of Massachusetts… women are better at hammering. To test this, men and women in the study were given targets to hammer. The men tended to use more strength, but women were better at hitting the nail on the head! The researchers think the difference is that men assume they need to use brute force and women assume they have to exercise more care.

If you're a woman who feels you constantly have to remind your other half who they've just been talking to at a party – you could be right. Scientists who tracked eye movements found women look at new faces longer than men and so memorise them better, possibly because they are more interested in reading emotions.

When it comes to recognising the facial expressions of people about to lose their temper, however, men do it better. [That makes sense!] According to a 2006 study for the journal *Current Biology*, while women interpret happiness, sadness, surprise and disgust more quickly, males are better at spotting anger sooner — particularly in other men. [That also makes sense.] Researchers suggested that men may have developed this skill because, in the past, they were more likely to need an early warning that another male was about to attack them.

When the drink is flowing, plenty of us could do with an inner voice to tell us when we've had enough. According to researchers at Glasgow Caledonian University, who asked people aged 30 to 50 about their drinking habits, women were better able to monitor changes to their bodies when they drank – and knew when stop. This just as well — because women also suffer worse hangovers! I should mention that few of the women I met in Glasgow stopped before they got plastered, behaviour that put this theory on rather shaky ground!

Nonetheless, researchers at the University of Missouri surveyed more than 1,230 students and found that women complained common hangover symptoms, such as dehydration, tiredness, headaches, nausea and vomiting, were much more severe the morning after.

This is because females have fewer of the enzymes needed to break down alcohol and smaller livers to process it, so their bodies have to work harder for longer. Women tend to weigh less and have lower percentages of body water than men do, so it stands to reason they should experience a greater degree of intoxication and, presumably, a more unpleasant hangover per unit of alcohol. A the risk of stirring up a hornet's nest, I don't suppose for one moment trans women have the same problem. No…? thought not.

A study carried out at the University of Northumbria showed that women are better gardeners than men. Researchers asked 25 men and 25 women to find a selection of plants hidden among other species in garden displays. The women were around 20% faster at identifying plants – and more accurate – than the men. Their superior skills originate from our history as hunter-gatherers, when it was a woman's role to pick plants that were safe to eat.

However… it's not all bad news for men, because men are better at finding their way to the garden centre. A range of studies have found that men are much better at orientating themselves in unfamiliar surroundings. Scientists think this is because the hormone testosterone, which is more abundant in the male brain, is associated with spatial awareness – something which men may historically have needed while they were hunting animals. According to psychologist Dr Cecilia Guariglia, men are reported to be better at using spatial memory and quicker in developing and using maps.

Of course women should drive, but they should leave the parking to men. Who is better behind the wheel has long been the source of arguments between men and women – *especially* couples!

But when it comes to safety, it's women that come out on top. One study tracked more than 200 drivers at London's notorious traffic hotspot, Hyde Park Corner. They were marked on 14 different aspects of driving, from checking carefully to going too fast. Women easily outperformed men, scoring 23.6 points out of a possible 30, compared with 19.8 for men.

Men's worst road traffic offence was aggressive tailgating. More than a quarter drove too close to other vehicles, compared with just 4% of women. But when it comes to parking,

men really are (almost) as good as they think they are. Psychologists at the Ruhr University in Germany asked 65 volunteers of both genders to park a large Audi in a parking space. They found women took up to 20 seconds longer to park accurately. Parallel parking showed up the biggest gender difference, with men 5% better at manoeuvring the vehicle into the space.

If you're a woman and hot-desking at work and sitting in the same seat a man has been using, you may want to give it a wipe down before you sit down. In tests of 90 offices, it was found that men leave more bacteria on their workspaces, computers and chairs than their female colleagues.

According to the study – reported in the journal *PLOS One* – men left 10% more bacteria on surfaces than women, probably because most men wash their hands less often than women. However, in another study in 2008 for the National Academy of Sciences, women were found to have a greater number of different types of bacteria on their hands. Microbiologists believe this could be because men tend to have more acidic skin — killing off some of the germs. On the other hand, (pardon the pun) women tend to use more moisturisers and cosmetics, making their hands stickier, which creates more fertile breeding grounds for bugs.

According to Professor Steven Austad – an international expert on ageing – historically, women seem to have survived longer because women are more robust, tending to outlive men by around five or six years. This may be because women have around 12% more body fat than men.

Women's body fat is stored in deep layers designed to keep them warm. And when it comes to car crashes, size is also and advantage. Men, being taller, bigger and broader than the average woman, are thus more exposed to, and vulnerable to damage. Men's accident recovery rates are also slower.

Men may be better sprinters, but women are better endurance runners… particularly when it comes to ultra-marathons of up to 100 miles and there are numerous reasons for this.

First, women are lighter, meaning they're placing less stress on their leg joints, particularly during downhill stretches. Shorter legs are often seen as an advantage, too, as they mean a faster stride, which enables efficient use of the 'elastic energy' created as they run.

Women also have a greater surface-area-to-mass ratio than men, so heat dissipates better throughout their bodies – meaning they are less likely to overheat. Women generally also burn around 75% more fat than men while running. This means that their energy is released consistently. Finally, women are better at pacing. A study of 1.8 million marathon results concluded that women are better than men at maintaining a consistent speed.

In 'high-octane' situations such as competitive sports, women are more likely to keep their cool.

A 2017 study of more than 8,000 men's and women's tennis matches found that males buckled under pressure more frequently than women. Even when a woman did falter in a crucial stage of a match, researchers found that their drop in performance was 50% smaller than that of men.

Though men and women rarely play competitively against one another, it vindicates the infamous 'Battle of the Sexes' between tennis players Billie Jean King and Bobby Riggs in 1973. After Riggs declared that a woman could never beat a man, King thrashed him in three straight sets. The same advantage applies to other high-pressure scenarios, such as

exams (girls consistently do better than boys) and job interviews (women are a third more likely to be hired).

A 2017 Canadian study of young female athletes found that women process and absorb oxygen more quickly into the bloodstream than men. The process is called oxygen intake and it's also a way of calculating aerobic fitness.

The Canadian researchers, who got participants to walk on a treadmill, found females breathed in air 30% faster than males and that their muscles extracted oxygen from the blood at a higher rate. Not only does this give them superior lung and heart health, but it also means women are less likely to experience fatigue after a difficult workout.

It may come as no surprise to learn that multi-tasking women are better at sports that require co-ordination and concentration. Women's dual-processing brains mean they are more proficient in activities such as swimming and racket sports… and if a man and a woman of equal height and muscle area competed against one another, studies suggest the woman would win.

The hippocampus – the part of the brain linked with memory and emotions, is a similar size in both sexes. But women have more connections going from left to right across the two halves, which gives them an advantage in collating information and making quick decisions.

Pain affects both genders differently, not only in terms of how and where we feel it, but how quickly it subsides. A 2009 study at the University of Florida found that women who have given birth will have a higher tolerance for pain. Women recover faster from pain and more readily seek help. Women are also less likely than men to allow chronic pain to control their lives.

Overall, men and women really do think differently. For instance, men are typically less empathic, but more likely to want to know how things work, while women are more interested in people and emotions. The study also compared autism with male personality traits and uncovered striking similarities.

Researchers at the University of Cambridge, analysed personality tests for more than half a million men and women and found that men and autistic men and women were more 'systematic' than 'empathetic'.

The researchers found that autism is an extreme version of the 'male brain' which makes it harder to read others' emotions. Compared to women, men are more likely to be uneasy in social situations, less socially perceptive and fail to understand why they have caused offence. [*Oh oh… that's me!*]

The opposite was seen in women, of whom 40% scored highly for empathy, compared to just 24% of men and 13% of autistic men. Being diagnosed with autism may mean having an extreme 'male brain', which can make it easier to obsess over a railway timetable than to work out how someone feels. [*That's definitely me.*]

The male brain is seen most in men who work in science, technology, engineering and maths-based jobs, and could explain why men are two to three times as likely as women to be diagnosed with autism.

Professor Simon Baron-Cohen is director of the Autism Research Centre at Cambridge [I met him at a conference in 2006]. Professor Baron-Cohen proposed the extreme male brain theory for autism two decades ago.

The theory suggested that men were better at 'systemising' by finding patterns and rules, while women were better at empathising. According to the United States Centers for Disease Control and Prevention, people with autism have trouble with social, emotional and communication skills that usually develop before the age of three. These traits last throughout a person's life.

There are evolutionary reasons why more men have systemising brains, for example for survival reasons, to learn different methods of hunting or for defence. Women may have developed better empathy because empathy is important for child-rearing.

The study was based on 671,606 people who answered questions on a website for a Channel 4 programme called Are You Autistic? Participants included 14,354 people diagnosed with autism.

All the participants answered questionnaires designed to test empathy, such as whether people thought they were insensitive and if they could understand when people were upset or offended. They also rated their agreement with statements which showed a systematic approach to life, such as '*I enjoy looking through catalogues of products to see the details of each product and how it compares to others*' and '*When travelling by train, I often wonder exactly how the rail networks are coordinated',* both of which sound a lot of fun!

The results of the survey revealed that 44% of men are systematic or extreme systematic types, compared to just 27% of women. This is important because more than half of people with autism have this personality trait.

The research, published in the journal *Proceedings of the National Academy of Sciences*, follows suggestions that autism is linked to over-exposure to the male hormone testosterone in the womb.

The authors have been forced to deny claims of 'neuro-sexism' based on the differences they identified in male and female brains. [Well that will be me too, because I believe in the accuracy and truth of carefully researched medical science.

Males and females *are* different in many ways. But that does not mean that males are better than females or vice versa. Both have equally valuable skills and both make equal contributions to society. Both are deserving of the same respect, and both should be treated equally.

The researchers make it clear that autistic people do have empathy and care about others. Autistic people have a lot to contribute… they just think differently. And that's a good thing – for everyone!

How our brains trick us into conflict

How is it possible that when presented with the same information, we come to hold such widely different views of reality?

The views we form about the world undergo a series of modifications before they morph into unassailable and resolute beliefs. But these changes are influenced by more than just the ability to comprehend and sort information or our own inborn prejudices.

The exercise of free choice can elicit an unfortunate need to take sides.

Dr. Kris De Meyer is a computational neuroscientist, working at the Department of Neuroimaging at King's Institute for Psychiatry, Psychology and Neuroscience. His documentary *Right Between Your Ears – a film about how we become convinced we're right, even when we're wrong,* is a must see.

Dr. D Meyer also teaches neuroscience and psychology-based public engagement workshops to students of environmental sciences. I'm a fan of Dr. Meyer's work because as a hypnotist, I'm interested in the behaviour of groups. And because I'm a hypnotist, I'm also interested in conflict.

Conflicts – small and large – always begin with differences in belief. From street thugs squaring off against each other to the mighty nations' war machines, someone will eventually throw the first punch… or the first grenade.

Dr. De Meyer Ph.D. has a brilliant metaphor for the processes of formation of beliefs and deeply held convictions.

If two people hold similar views, they could be perceived as standing at the top of a pyramid, where their morals, ethics, opinions, preferences and beliefs will be more or less the same. The introduction of new information however, may cause them to see things in a slightly different light. Accordingly, they will take a step down the side of the pyramid. In this way, their morals, ethics, opinions, preferences and beliefs will move slightly apart. More information and debate will result in more steps down the pyramid and the distance between those steps will increase.

As the pair continue their descent, so their views become more divergent, their convictions stronger and more entrenched, and they will drift even further apart. As they seek (and find) more reasons to support their beliefs, they will grow to dislike each other.

Changing opinions create conflict and a need to self-justify. This need is a deeply embedded part of human nature and the human condition – everybody will experience it when the need arises – and it inevitably leads to further behavioural measures, such as defending decisions to others, including friends or family… and more self-justification.

Perfect examples can be found by looking at the emotional angst, disbelief, frustration and anger resulting from Brexit and the election of Donald Trump. Part of the reason is that political rhetoric doesn't persuade equally or fairly – it splits and polarises opinion and breaks up alliances and friendships.

The more we argue our corner, the more convinced we become that we are right and they are wrong. The further down the pyramid we go, the more prone we are to confirmation bias (a very dangerous condition!) and the more open we become to outrageous, scandalous and false propositions about our opponents.

Our dislike for anyone holding views in opposition to our own increases our willingness to accept derogatory stories as the truth. The more certain we are of our own position, the more willing we are to denigrate, insult and destroy the reputations of those on the other side of the pyramid. And you can bet your life they will be doing exactly the same to us!

In 1957, psychologist Leon Festinger introduced the idea of ‘cognitive dissonance’. According to Festinger, we hold many opinions and beliefs about the world and ourselves, but when these opinions clash, there is a discrepancy that culminates in a state of tension. Cognitive dissonance perfectly describes the inconsistencies we perceive in other people's views and behaviour – but alas, rarely in our own.

In situations where attitudes, beliefs or behaviours produce feelings of tension or discomfort, our natural reaction is to try to keep all our attitudes and beliefs in harmony. We evolved to seek consistency in our attitudes and beliefs so any situation where our perceptions become inconsistent will create a powerful desire to maintain or restore consistency. This can sometimes give rise to irrational and extreme behaviour.

Festinger’s proposition was that the inconsistencies we detect in our own beliefs create emotional discomfort that acts as a force to reduce the inconsistency by modifying beliefs or adding new ones. Cognitive dissonance becomes the catalyst of opinion change.

In our modern information driven technologically advanced society, we have greater freedom of choice than ever before. But freedom of choice can create dissonance if it involves difficult trade-offs. Choice can result in a growing commitment to the chosen option that in turn can lead to belief change.

Almost 60 years of research and hundreds of experiments have, as one would expect, shown that dissonance operates most strongly when events impact our core beliefs – especially the beliefs we have about ourselves as good, competent and intelligent people. Take for example the effect the attack on the World Trade Centre had on our erstwhile comfortable and familiar view of the world. Suddenly we were presented with a choice of which side to be on.

The opinions and beliefs we adopted still remain in place years later. The opinions formed in the West were not necessarily the same as the opinions held by people in the Middle East. These conflicting opinions have resulted in feelings of mistrust and in some areas, in outright hatred.

So how do our beliefs become so firmly entrenched? What psychological processes are involved in this kind of decision-making?

We all consider ourselves rational, competent and intelligent people who would never wish harm on any of our fellow human beings – except of course those we consider a threat – and it's easy to view anyone whose beliefs are diametrically opposed to ours as a threat. Sometimes it's hard to understand why other people can't see what to us is patently obvious!

Are they blind? Surely no one can be that misguided or ignorant of world affairs, or so terminally stupid they can't see the bigger picture that is obvious to anyone blessed with a thinking brain. After all, we are not only more enlightened, we are in possession of a broader and more informed version of the world! Aren't we?

It's no coincidence that people on opposite sides of a polarised debate judge each other in similar terms – our evolutionary social brains predispose us to this way of thinking. This behaviour has its roots in evolving groups' need to protect themselves from other possibly predatory groups.

A cursory look at the trouble spots of the world proves the point – we are constantly reminded of the futility and stupidity of pointless human conflict on the nightly TV news – Sunnis killing Shias, Shias killing Sunnis, Brexiteers bickering with Remainers, Democrats squabbling with Republicans… We are treated to a seemingly never ending procession of those bemoaning the result of a democratic vote and demanding a second referendum because the outcome of the first was not to their liking, or seemed unfair, or fixed, or that Russian hackers were to blame.

If only they could see things as clearly as we do!

Babies can evaluate the behaviour of others by the time they're six months old. Even at that early age, they can tell the difference between the safety and comfort of their mother's arms and the unpredictability of strangers.

The ability to discriminate is also part of the human survival strategy and obvious in the school playground, where alliances are formed and dissolved on a regular basis. As we grow up, we learn the powerful automatic cognitive processes that will protect us from being cheated – a good thing in its own way of course – but this type of social awareness can also mislead us.

Social media often makes matters worse because words on a screen cannot possibly help us evaluate the perspective and intentions of others – especially in the absence of face-to-face interaction, observation of body language and interpretation of facial expression.

Mails, tweets and text messages can seem peremptory, even rude without the face-to-face interaction that we've been used to for the last hundred thousand years. It's all too easy to believe that those on the other side of the debate really are an abusive bunch of knuckle-dragging underdeveloped Neanderthals!

What is lacking is a better understanding of how our views change so easily and rapidly. Dr. De Meyer's pyramid analogy provides a useful model of how people's opinions change from weak to moderate to strong convictions – about politicians, footballers, or X Factor finalists.

Sure, having strong convictions can help us achieve fine and selfless acts, but we must also learn to control antipathy and mistrust and try harder to understand where others are coming from… You never know, the answer might turn out to be at the top of the same pyramid we started out from!

The window to the soul

Forget body language – the real key to communication is in the eyes…

Your eyes give away information about mental states such as attention, boredom, attraction and intention. But your pupils give away more.

Pupil dilation varies depending on the amount of light entering the eye – the less light, the more the pupil dilates and vice versa. Drugs and alcohol can also affect dilation.

Heroin will cause pupils to contract to the size of pinheads whilst giving the iris an unusually vivid brightness.

Sexual interest is also known to trigger pupil dilation. Pupils also dilate when women look at babies or when hungry men look at food!

But pupils also dilate rapidly in response to information being processed moment by moment – including when people are in rapport or in empathy with each other.

A new study, conducted by researchers at Dartmouth College Social Intelligence Laboratory in New Hampshire, has found that patterns of pupil dilation might reveal when people ‘connect’.

Previous work into attention and connection focussed on what people recall after listening to a story, but this requires the participants listening to the story to self-report what they think and feel, and that can be susceptible to bias and other memory issues.

The Dartmouth researchers asked participants to relate their autobiographical stories. They were filmed and their pupil dilation recorded using infrared eye-tracking technology. In this way, the team were able to measure engagement in real-time by evaluating a physiological response – in this case, pupil dilations, something that cannot be faked or controlled consciously.

The researchers chose four high expressive and four low expressive video clips to show to listeners with both high and low empathy scores. Listeners watched speakers' video clips while they also had their pupil dilations tracked.

Pupil dilations reflect conscious attention, so the researchers looked for periods of shared attention by comparing speakers' and listeners' pupil dilation patterns – specifically

looking for incidences both were synchronised – in other words happening at the same time.

They found that ‘collective pupillary synchrony’ between speakers and listeners were greatest during the emotional peaks of a narrative, but decreased as the story became less engaging.

Listeners with higher empathy listened more attentively, but the results also show that speakers who were highly expressive were more likely to evoke ‘pupillary synchrony’, as they held their audience’s attention.

To confirm the results, participants listened to the audio only – and were then asked to evaluate how engaging each narrative was by using a physical slide bar. That data was used to record the listener’s reactions to prominent emotional peaks for each narrative.

So… if you’re talking to someone and you’re wondering whether or not they’re interested, or at least paying attention, a glance at their pupils might give you an indication.

Thinking on your feet

The very best stand-up comedians have a gift more powerful than a ready wit – they have the ability to think on their feet and adapt and respond in a fraction of a second. On the stage it can mean the difference between life and death.

The ability of a seasoned entertainer to react to an audience quickly is something that cannot be taught or learned… it is inborn – and on the stage it can mean the difference between life and death.

This may come as a surprise, but IQ and personality not as important as a quick brain and rapier-like repartee. The downside though is that people who possess this ability are not as gifted when it comes to empathy for others' feelings.

Nonetheless, rapidity of thought and action have alway been more impressive than quality. And who better to prove the point than a group of Australians, citizens of a nation renowned for their lighting wit…?

After much research, Aussie psychologists have confirmed that people who are quicker at answering general knowledge questions come across as more charismatic and thus more impressive – the salaried wit is always popular and never found lurking in the kitchen on his own at a party.

Other factors, including IQ and emotional intelligence, while useful, are not as important as the ability to think and respond swiftly. The Australian study has been published in *Psychological Science*, a journal of the Association for Psychological Science.

The Australian researchers' mission was to discover the psychological basis of charisma, and whether or not this quality depended on specific personality traits. In order to test how mental agility contributes to charisma, they carried out a study involving over 400 participants.

All the participants had first undergone personality and intelligence tests. The researchers also asked the participant's friends to rate how charismatic, funny, and quick-witted they were.

All the volunteers were then tested with 30 simple questions, ostensibly to test their general knowledge, but the test included questions they had to answer as rapidly as possible, such as naming a famous boxer or film star.

They were also given a mental speed test based on visual tasks, including spotting a dot on a screen as quickly as possible.

By cross-referencing the results with their friend's answers, the team found the people who were faster in the mental speed tests were also rated more charismatic by their peers.

The indisputable end result was that intelligence and personality turns out to play a less important role than speed.

However, contrary to the researcher's predictions, mental speed was not associated with social skills such as conflict management or understanding other people's feelings.

Perhaps the words 'class clown' might spring to mind. Usually known for low exam results, the class clown is nevertheless popular because of his ability to crack off the cuff jokes.

There was one in my class when I was at school, and although not thought of as particularly bright academically, he did have the ability to reduce the whole class to fits of laughter at exactly the right time, carefully choosing his moment to deliver a killer line with the precision of a laser guided missile.

He never made the mistake of making a joke which risked falling flat – only cracking one when he was absolutely sure it would be hysterically funny. These lines did not come thick and fast – on the contrary they were few and far between – perhaps only four or five a year. But by having the patience to use them sparingly, they were memorable. And so was he.

It's not just those with a natural talent for comedy that have this gift of rapid reaction – if you examine charismatic politicians, artists, musicians – they all have this gift and it's one of those things that make them special.

So speed is everything in the popularity stakes.

Social intelligence depends on more than being adept at specific social mores. Whilst these are undoubtedly important components of social intelligence, the Australian research shows that rapidity of thought plays an important, if hitherto unrecognised role.

The Aussies also commented that people who think more quickly are better at masking second-rate replies by including often ad-libbed associated humour.

For some, this sort of social intelligence is key to the survival strategy.

Having spent a goodly proportion of my life in the entertainment business, in a previous life as a stage hypnotist, this research makes complete sense.

Perfecting errors

We’re human… which is why we don’t always learn from our mistakes.

Believe it or not, most of us make the same mistakes time and time again, no matter how mindful we are and how determined we are not to do it again, but all we really succeed in doing is perfecting our errors.

Psychologists already understand the processes involved – mistakes cause our brains to pause and take stock, but then we quickly slide back into the same patterns and behaviours. We now understand that this pause can lead to conflicting advice when it comes to making future decisions.

During the pause, the brain collates additional information in an attempt to prevent us repeating the same mistake. But at the same time, it reduces the quality of what it learns in its scramble to collect as much new information as possible. These two actions cancel each other out and limit our ability to make a better decision next time. So the pause which is supposed to assist the brain collate new knowledge can also lead to conflicting advice.

We already know that humans often slow down after mistakes, a phenomenon called Post-Error Slowing (PES) but until now, the neurological processes that occur with PES were not understood.

During a series of tests carried out at New York University, groups of monkeys and humans watched moving dots on a computer screen. Unconsciously, both monkeys and humans tried to predict which direction they would end up travelling in by moving their eyes in that direction. A large proportion of dots moving to the right caused each group to look to the right, and so forth. The researchers then made the movements more erratic to make it more difficult to determine the direction.

Both humans and monkeys displayed strikingly similar behaviour. After making mistakes, both slowed down the decision-making process and the rate of slowing was directly linked to the difficulty of the decision. This suggests the brain needs more time to assimilate more information.

However, the overall accuracy of their choices didn't improve – a clear indication that the quality of accumulated sensory information was lower.

The researchers observed brain activity in the monkeys – particularly the neural responses from a region of the parietal cortex involved in gathering information while they performed the task. During the decision making process, the activity in these neurons increased at a rate that depended on the quality of evidence they were able to collect.

After mistakes, the exact same motion stimulus produced slower neural activity, something which is consistent with impaired quality of sensory evidence gathering.

Critically, the neurons showed a significant increase in how much information was accumulated before a decision was made which prevented a reduction in the overall accuracy. That combination of changes is what slows us down after mistakes.

In other words, the brain gathers more information for the decision to prevent repeating the same mistake again. A second change reduces the quality of information we obtain, which then reduces the likelihood we will make an accurate choice.

The researchers explain that because the two processes cancel each other out. The deliberative approach we take to avoid repeating a mistake neither enhances nor diminishes the likelihood we'll repeat it.

However, people with ADHD or schizophrenia often do not slow down after errors and this has been interpreted as an impaired ability to self-monitor behaviour. The results of the experiments suggest that this absence of slowing may reflect much more fundamental changes in underlying decision making brain networks for those with ADHD and schizophrenia.

Another recent study also examined the relationship between indecision and the complexity of mixed emotions.

Some people see mixed emotions as something undesirable and a sign of moral weakness. But, people who experience mixed emotions are better able to differentiate between them and live their lives in an emotionally happy and balanced way.

The full research was published in the journal Neuron.

Ambivert Alert!

We've all been told that we are either introvert or extrovert, quiet bookworm or party animal. But if you can be both, you may be an Ambivert.

A friend of mine is very introverted – he doesn't like to make a fuss, hates the spotlight, prefers a quiet evening in and hates activities that involve horsing around and making noise. Another chap I know is usually the first person to dance on the table before last orders, something which I find irritating.

When I first came across Oregon-based behavioural expert Vanessa Van Edwards' paper on this, it struck a chord with me immediately, mainly because most of the time I am introverted but can turn my extrovert side on and off at will, whenever the circumstances demand.

When I'm on stage doing hypnosis shows I'm a big show-off. But at home, or at the pub, or with my own friends, I'm quiet, don't go out much, and avoid crowded noisy places. I avoid 'impromptu performances' like the plague and hate being recognised in airports – OK, that only happened once, but unlike most show business types, I found it very much not to my liking.

Psychologists now believe that around two-thirds of people are ambiverts, a personality category that has, until now, been given disgracefully little attention, although psychologist Hans Eysenck first postulated the theory in the 1940's.

Professor Adam Grant of the Wharton School of Business at the University of Pennsylvania has also published a paper on the subject in the journal *Psychological Science* in 2013.

Ambiverts are great at getting other people to trust them. I'm a hypnotist and quite a good one, even though I say so myself, which is something I do all the time. I engage in flexible patterns of talking and listening, and like all ambiverts – remember… that's two thirds of the population – I am sufficiently well versed in the arts of persuasion to be able to be assertive and enthusiastic enough to to persuade.

Both introverts and extroverts can become energised and animated whilst talking to other people.

But it's a different story when the energy is all coming the other way. The extrovert will enjoy the energy of other whilst the introvert will need a break before very long.

Professor Adam Grant observes that successful ambiverts will avoid giving the hard-sell – they can get their own way by pushing less rather than more. In general ambiverts have a natural ability to 'play it down the middle'.

However, ambiverts feel intense pressure to mirror the person there are with, copying body language, speech patterns and other behaviour. I don't – because 'mirroring' is something taught in NLP, or Neuro-Linguistic Programming, to give it its full and overblown title.

I find it extremely irritating when people try it on me. The temptation ambiverts feel to 'mirror' other's behaviour however can be irresistible.

So, when ambiverts are with extroverts, they are more likely to feel like rising to the occasion, yet at the same time avoid appearing too excited or overconfident.

They can also get along with most personality types, brash or timid.

Ambiverts have a wider range of social and behavioural skills and can connect with a wide range of people. They can slide up and down the emotional spectrum depending on the situation, context and people around them.

One defining characteristic is that ambiverts can often be less decisive on what to do in certain situations – they prefer to read and consider situations carefully.

It seems the real advantage to being an ambivert is the ability to adapt and adopt the middle ground, and to everyone's liking.

…and that's a good place to be!

Do leopards change their spots?

Scientists at the University of Edinburgh have just completed the longest-ever study of human personality. Guess what… you're a completely different person in your seventies than you were in your teens.

It's always been thought that your personality is fixed by the time you reach your late teens. But scientists at the University of Edinburgh are now questioning that belief. Their results and methodology has been published in the journal *Psychology and Ageing.*

The Edinburgh researchers looked at 1,208 14 year-old school children in Scotland in 1947 when they were 14 and asked their teachers to assess their personality. In 2012, when they were 77 years old, the authors traced as many of the participants as they could and invited them to take part in a follow-up study.

Of the original 1,208, the team managed to track down 635 of them, and 174 agreed to rate themselves on the same six characteristics by filling in a questionnaire. They also asked someone who knew them well to rate them.

Even though they expected to see some evidence of personality stability over 63 years, astonishingly, they found no strong correlation between the personality traits they had as adolescents and those of their later years.

Most teenagers go through a period of being less conscientious, impulsive, moody and irritable – It's all part of growing up and there are almost certainly evolutionary reasons for it. But as they grow into adulthood they also become more social for a few years. As they pass into old age, those trends then reverse.

To carry out the study, the researchers concentrated on six key character traits:

- self-confidence
- perseverance
- stability of moods
- conscientiousness
- originality
- desire to excel.

After 63 years the researchers found a ‘fairly low’ link between conscientiousness and stability of moods, but no link between any of the other traits.

Personality changes very gradually and so can appear relatively stable over short periods of time. But differences will obviously increase as people age.

The longer the interval between personality assessments, the more distant the relationship between the two will be.

After 63 years, it seems there is hardly any relationship at all.

The results were condensed into an overall rating for a single underlying trait called 'denoted dependability'.

The 174 who completed the questionnaire had higher cognitive ability scores as children – nearly all had been rated by teachers as being more dependable.

Of course there are other variables to take into consideration – jobs and parenthood tend to accentuate the trend toward general maturity and better, more stable mood. As we get older, we tend to become more accepting of ourselves, and the world in general.

However, it has to be said that the sample was very small and not very diverse. This is no refection on the work of the researchers because a dwindling participant base is inevitable over a 63-year period. The original study also relied on teachers rating student’s personality at a time when the participants were not able to rate themselves.

Of course, the best way of confirming these results would be to look back over your own life and ask yourself –

- *am I the same person I was 20, 30, 40, 50 years ago?*
- *do I take as many risks?*
- *do I have the same ambition?*
- *am I more, or less confident?*
- *do I persevere at tasks more, or less than I use to?*
- *am I more, or less conscientious than I used to be?*

Honest answers now…!

Greed Makes You More Suggestible

Avarice excites the brain's pleasure centres and greed makes us more suggestible…

Hypnotists are very fond of reminding us that hypnotisability has nothing whatsoever to do with gullibility, and this is true. Neither do you have to be particularly suggestible to be hypnotised, although it is widely accepted that some people are more suggestible than others.

But there are psychological techniques that can quite easily make everyone equally suggestible. And here's one of them…

Suggestibility and gullibility do have things in common. Suggestibility and gullibility are so closely related, it's like they're cousins – suggestibility relies on the suspension of critical faculties, mainly located in the frontal cortex, the area of the brain most responsible for planning, organisation, anticipation and overall common-sense. Gullibility on the other hand relies on the brain having no critical faculties in the first place.

Whether it is suggestibility or gullibility that persuades normally sensible people to hand over large wads of money to the widow of a wealthy Nigerian businessman who promises a ridiculously large commission in return for helping her get a supposed $20 million fortune out of Nigeria and into Britain via your bank account, I leave it up to you to decide. The point is – where the opportunity to make easy money presents itself, greed is the most effective way of suspending those critical faculties we all believe we have.

In these cases, where avarice excites the brain's pleasure centres to such a degree as to actually get people to part with money, gullibility is so closely linked to suggestibility that the two become inseparable companions. Recent history is littered with innumerable Get-Rich-Quick schemes, ranging from books punting the secrets of the super-rich to the more iniquitous pyramid schemes that surface every few years.

The pattern is always the same – those lucky enough to be in at the very beginning make money, but eventually the system collapses in on itself and most lose theirs. Basically, it's a Ponzi scheme where new 'investors' finance the original investors' profits – those at the top of the pyramid – but there's nothing left in the pot. Eventually everyone realises how unutterably stupid they have been, learn a hard lesson, and then fall for the next one when it comes around.

The sad truth is that there is a never-ending supply of people who will always be suggestible or gullible enough to keep wasting their hard earned money on any proposal that promises wealth – especially wealth without the hard work.

Amongst the hundreds of publications promising instant wealth is a recent tome with the no-nonsense title *'I Can Make You Rich'* by the well-known hypnotist and paragon of virtue, Paul McKenna. The manual (you can read it in about an hour) plumbs the depths of good taste with its cheesy gold lettering and (in the hardback edition) its gold-edged pages.

'You Can Make Me Rich' even comes with a hypnotic CD which no doubt will make becoming rich more easily attainable. The equally cheesy yet terribly earnest, McEnema peers at us from the front cover with the faux-sincerity which has made him famous.

All these kind of books belong on the same shelf as Professor Frotteur's Guaranteed System for Winning at Roulette and other such farcical titles.

The increase in the general intelligence of the general populace has done absolutely nothing to immunise people against credulity! If anything, people are even more stupid now that they have disposable income than they were when their primary concern was how they were going to bay this month's bills.

It is astonishing the number of people who have fallen for the deceased Nigerian businessmen scam. All that is required is the payment of a small 'release fee' of just a few thousand pounds, followed by another few thousand pounds to cover Nigerian Government taxes, and then another wad of money until the target of this increasingly popular internet scam either gives up or goes bankrupt.

This credulity is the same reason so many people have bought books which promise to make them rich… or thin.

It is the latest literary offering in the genre to which I wish to turn my attention – a best-selling piece of chicanery, also recently made into a DVD, called *The Secret* – a book that celebrates the stupidity of our fellow human beings.

The Secret has sold millions of copies worldwide and its author is Rhonda Byrne, a former Australian reality TV producer. I suspect that given Ms. Byrne's professional background, not to mention her numerous contacts within the industry, it was a relatively simple task to raise her work of stupendous fiction from a simple only-fit-for-the-bin manuscript to work of genius in a few relatively easy steps.

The underlying philosophy of this mind-boggling work of deceit is to persuade the reader that '*we can have anything we want – we just have to think about it in a positive way!'* It's become the fastest selling self-help book ever and a disturbing monument to the credulity of humanity credulity.

The gist of *The Secret* is that there is no problem, no goal, no wish, that cannot be fulfilled just by thinking… new car, new life, fabulous riches. Yes, it can all be yours if you read this book and follow the exceptionally simple instructions. *'Prosperity'* it claims, *'is your birthright'.* And millions have bought into this fantasy, making Ms Byrne a multi-millionaire in the process!

Like me, you might be thinking, if this book is so powerful, why aren't the world's leaders and their finance ministers reading this? Why not distribute copies to the poor and the starving? Could it be because it's a load of ridiculous bollocks?

Byrne claims that in a moment of enlightenment she suddenly understood the biggest secret in the entire universe, a secret that Newton (that's Sir Isaac, not me) Shakespeare, Beethoven, Hugo, Einstein, Edison, Plato, had long understood, yet had somehow managed to keep to themselves, the selfish buggers.

Byrne embarked on a mission to bring the joy of this knowledge to millions of others and no doubt bring even more millions to her own bank account. But this is more than the age-old exhortation to 'follow your dream'. Climb every mountain, ford every stream, follow every rainbow, 'till you find your dream…

According to Byrne, getting your hands on a big house, big car, great job, great husband, hour-glass figure (I think we can see the market that *'The Secret'* is aimed at!) is all easily achievable if you visualise it, focus on it and place an order for it exactly as you would from a catalogue. All you have to do is phrase your request in the right way and that means including lots of detail. If you want a bigger car, then the first thing to do is to get a bigger garage. If you want something that you know you can't afford, then you must start saying to yourself *'I can afford that'.*

There is no room whatsoever for any negative stuff in Byrne's world of delusion. According to Byrne, thinking long and hard enough about something will make it happen. No need to get out of bed earlier or put in those extra few hours then. According to the Gospel of St. Rhonda, a person who thinks thin thoughts cannot possibly be fat! Coincidentally, this is the same line of thought that forms the core of McKenna's over-simplistic weight loss philosophy.

What is more incredible about *'The Secret'* is that on the surface at least, Byrne appears to believe all this herself. She is certainly an enthusiastic interviewee (but then she would be, wouldn't she?) and she has certainly attained great wealth.

Thinking about wealth creates wealth, is her philosophy, and who are we to argue? It's obviously worked for her. Putting yourself before others (a novel twist on an old idea if ever there was one) is her creed and if I'm honest, something I have been advocating all my life anyway.

Byrne falls back on the Bible (Oh Jesus!) claiming that Abraham, Isaac (that's the son of Abraham, not Sir Isaac) Jacob, Joseph, Moses and Jesus were all millionaires *'with more affluent lifestyles than many present-day millionaires could conceive of'.* What? Without electricity or a private jet? The woman's gone raving stark staring mad!

Then Byrne pulls one of the oldest tricks in the book, one that I find particularly annoying – she falls back on science to add gravitas to her twaddle. Not even the brainiest quantum physicist fully understands quantum physics, so how on earth can this woman possibly claim quantum physics as the basis for this bunch of puerile blather?

She claims that human beings are *'transmission towers'* which emit thoughts on a particular frequency and in turn attract '*all like-things which are on the same frequency'.*

Not even L. Ron Hubbard would have had the audacity to pull that one!

Nonetheless, the conclusion of this train of thought is that negative thoughts attract negative things and positive thoughts attract positive things. Yippee! Byrne has very cleverly recognised the true secret, a secret genuinely shared by relatively few – a lot of people are actually stupid and lazy, and will buy into anything that promises them everything in return for nothing.

According to St. Rhonda of Byrne, people attract misfortune because they are on the same wavelength as misfortune itself and this goes for people who get cancer, are killed in motor car accidents or terrorist attacks, or who die of hunger. *'Illness cannot exist in a body that has harmonious thoughts'* she claims. People *'create'* their own misfortunes because they are simply not thinking positively enough.

Next time St. Bob of Geldoff invites you to send money to starving children in Africa, don't sent them food, send them one of these remarkable books instead. You know it makes sense!

But as far as quantum physics are concerned, Byrne has been caught out. In physics (and yes, that does include the quantum variety) there is always the electromagnetic force in which positives actually attract negatives and vice versa. Byrne's use of flawed science makes the whole thing even more ridiculous… yet still copies continue to fly off the shelves.

It would be easy to say that the success of Byrne's book owes more to global marketing strategies than to substance, and that would certainly in part be the truth. But that's not the point. The real point is that there is such a thirst for this kind of drivel that one must inevitably come to the conclusion that it has to be, albeit perversely, part of the human survival strategy – the part where the weak get distracted from reality and give the strong a head start.

Jacob Bronowski said in *his* book *The Ascent of Man*, science and progress is a straight line. True science stands up to rigorous test. Those that deviate from that straight line will be lost.

The people of Easter Island at some stage in their history became distracted from the straight line and devoted all their energies to a false belief. As a result, they were lost forever, made extinct by their own hand.

In the same way, members of religious cults who commit mass suicide merely ensure that their genes will not be passed on. Of course these are extreme examples, but good examples nonetheless.

The strong – in this case that means the smart – are more likely to see their progeny survive and flourish in this modern world of ours than those who are tricked into merely daydreaming.

The daydreamers are unwittingly doing their bit to ensure what nature intended all along – the extinction of the stupid gene.

Is racism the result of our own evolution?

In the late 1940's, a shocking experiment carried out by two African-American psychologists changed the way we think about racial prejudice…

Kenneth Bancroft Clark, a psychologist and teacher at the City College of New York, and his wife, Mamie Phipps Clark, were both activists in the Civil Rights Movement. Together, they founded the Northside Center for Child Development in Harlem and Kenneth Clark went on to become the first black president of the American Psychological Association.

In their landmark experiment, children between the ages of three and seven were shown two dolls, each identical except that one doll was white with yellow hair, the other, brown with black hair. The children were then asked which doll they would rather play with, which was the nice doll, which was the bad doll, which doll was the nicer colour, and so forth.

The experiment revealed that all the children expressed a clear preference for the white doll. But the deeply unsettling discovery was that the black children also preferred the white doll when asked the same questions. The Clark's findings exposed the internalised racism in African-American children and a self-hatred more acute among children attending segregated schools.

Psychologists and sociologists believe one of the reasons for this result was that many Western cultures harbour a taken for granted assumption that while people – supposedly civilised, and technologically advanced – are better than other races. Today, this unconscious bias is called 'white privilege' and has become the subject of fierce debate. White privilege is the banner headline of the Black lives matter (BLM) movement.

Living for many years in South Africa, I had first hand experience of the belief in white superiority. Before the end of Apartheid, black people were brought up with the idea that the whites were superior. They were not just taught that the whites were superior, the whites had done a pretty good job of proving they were superior – they lived in bigger more luxurious homes that were cleaned and maintained by black servants – they owned expensive motor cars, where the blacks walked to work or rode on overcrowded trains and buses. The whites owned TV sets, practiced their religion in beautiful buildings, sent their children to better schools and most enjoyed huge wealth.

By the 1960's, most African Countries were transitioning to Independence. Black African's dreams of *Uhuru* – freedom – were at last about to be realised. Ordinary people expected

independence to bring them a share of the wealth and with it, better living standards, better housing, better education, better medical care, and a say in the way their country was governed. Most important, there was a [perhaps unrealistic] expectation that overnight the shacks would be demolished to make way for modern housing – everyone would drive their own motor cars and watch large TV sets.

But apart from a new and relatively small black privileged elite, the majority of the population still walked or rode to work on overcrowded trains and buses, and after cleaning the impressive mansions, went home to their overcrowded shacks and no electricity. Eventually, the truth began to dawn… despite queuing in the blistering sun for hours on end to put a cross on a piece of paper, nothing had changed for them. Nor was it likely to. Slowly, the realisation began to dawn… the whites *were* superior after all!

You see the difficulty? This way of thinking was drummed into the poor for generations – and it's a difficult idea to shake. Talking-to a black woman in Oudtshoorn in the eastern Cape, in 2006, she told me that she believed white people were superior. Despite my best efforts, there was nothing I could say to shake that belief.

But the real problem is even deeper rooted. Over hundreds of thousands of years, we have learned to be protective of our own group or our own tribe – after all, the tribe from the other side of the mountain might want to steal our crops, our livestock, or our women, or take our children into slavery. So we have learned to be distrustful of strangers. And if they look different or behave differently than us, we are bound to be even more suspicious.

Our brains have evolved to help us make snap decisions, even if it means thinking the worst about people. When presented with negative information about another person our brains will react accordingly – the metaphorical alarm bells start ringing, reinforcing any negative ideas we may have about strangers.

A team of researchers led by Professor Robin Murphy at Oxford University and reported in the *Journal of Cognitive Science,* used functional MRI scans to examine the brains of 22 participants while they carried out a series of learning tasks. These tasks featured imaginary social groups that, for the purposes of the experiment, were portrayed as either good or bad. The groups represented majorities and minorities, as well as racial or religious groups. During the experiment, the majority groups were presented to the participants more often. The behaviour of each group was also an important factor in the experiment.

As the participants carried out the tasks, which involved reading fictional information about the groups, the anterior temporal lobe – one of the areas of the brain that deals with semantic memory and the association with people and places – was monitored for any changes in activity.

Once a participant had decided a group was good or presented no threat, the activity in the anterior temporal lobe reduced to normal levels, but if the group was perceived as bad, the activity increased as the participants continued to process the information negatively. The scientists believe this indicates the brain works harder to process negative information and also leads to an increased negative view.

While the study was restricted to a relatively small number of people, it was also significant as all the participants reacted in the same way – a strong indication it is very likely that these patterns exist in wider society.

Previous studies have also demonstrated similar results, confirming that people are predisposed to make snap judgements about others. For instance, football fans need more time to associate positive words with an opposing club than with their own team and supporters of a particular political party more quickly associate a favourable attribute with their party than with political rivals.

A number of brain regions are thought to be involved in making these kind of judgements. They include the amygdala – associated with fear and anger – the dorsolateral prefrontal cortex and the anterior cingulate cortex. The connections between these regions are also, coincidentally, recognised as pathways that affect judgement and behaviour during hypnosis, particularly when it comes to the separation of actions from the ability to scrutinise and be critical of those actions.

Of course, when only limited information is available, there is always the possibility that poor choices – not to mention poor decisions – will be made when relying on first impressions. Such snap decisions may have negative results in complex modern societies, but they have in the distant past provided us with an evolutionary benefit and survival strategy at a time when stereotyping and prejudice were a useful time-saving device, or at least a rough guide, in situations where rapid decision making might have been vital for survival.

The research is important because the findings provide useful information about how the brain learns prejudice. However, it would also be interesting to look at how the brain *unlearns* a stereotype. In that circumstance, would the anterior temporal lobe still be involved? Would its activity or structure tell us something about why some individuals stick to false beliefs when evidence proves otherwise?

Discrimination and conflict across cultures is of great interest to psychologists who question whether we are naturally inclined to like people who are similar to ourselves and to dislike those who are different, or whether discrimination really is a learned behaviour.

To find out more, Scientists at the University of British Columbia looked at the reaction of babies as they interacted with people who spoke both familiar and different languages.

At the age of one, babies believe speakers of the same language are 'good' and expect them to be helpful and positive toward them. At this age, they do not show any bias toward people who speak an unfamiliar language or expect them to act negatively, so we can conclude they are not born with any bias. It is not until the age of three that they tend to discriminate against the unfamiliar and this suggests that discrimination and negativity toward groups different from their own is likely learned *after* the first year of life.

But by the age of three, children begin to show positive biases toward people who are similar to them and negative biases towards those who are different.

Researchers conducted six experiments with 456 infants between the ages of eight months and 16 months. The experiments examined how quickly infants acclimatised or 'habituated' to either familiar or unfamiliar language speakers. Habituation measures how infants process pictures and sounds presented to them. When the information meets infant's expectations, their attention drops off at a faster rate. By measuring infant's rate of habituation to familiar and unfamiliar languages, the researchers measured whether the infants had formed positive or negative biases.

The language speakers were presented via puppet shows with characters that would perform either 'pro-social' (giving) behaviour or 'anti-social' (taking) behaviour. Across all

the experiments, the researchers found that by the age of one, infants not only think of speakers of their native language as good, but they also expect them to be pro-social. Conversely, they appeared to be surprised when observing speakers of their native language engaging in anti-social behaviour.

The study provides critical insight into the origins of social group bias because it allowed researchers to understand how positivity and negativity toward groups develops.

During the filming of the very first *Planet of the Apes* movie in 1968, many extras were employed – some playing Apes, and some playing humans. Charlton Heston, the star of the film, said that *Planet of the Apes* had '*the best movie ending ever'.* That apart, lunch breaks during filming were marked by a series of unexpected and highly unusual events and psychologists have argued over its causes for decades.

At the start of the week, extras mixed freely together – the 'apes' sat down to lunch with humans and vice versa. But by the end of the week, humans and apes began to separate into groups – sitting like with like. By the end of the second week, the 'apes' too started to separate themselves into groups of chimpanzees, gorillas, and in keeping with their senior position in the movie, the orang-utans bagged the best tables. No one told them to do this – it just happened.

Children are not inherently biased. Living in the new South Africa for many years, white and black children were allowed to mix freely for the first time. Watching these very young children play at Zoo Lake in Johannesburg, one could be excused for thinking that apartheid had never happened. [I took the precaution of taking a social worker with me, for obvious reasons!]

However, the same colour-blindness did not extend to the older children, and certainly not to the adults. Old habits die hard I suppose.

The following week, I was at the University of Stellenbosch talking about hypnosis to a very enthusiastic and very large audience of students. The white students took up most of the front half of the auditorium, the Indian students sat in their own area, as did the coloured students, while the relatively few black students remained huddled towards the back.

Racism – whether conscious or unconscious may indeed be the product of our evolution, but I have no doubt it is being unnecessarily prolonged by cultural mores.

If only we could retain some of the innocence we all had as children.

Liar liar, pants on fire…

Can you spot when people are lying to you? If the answer is no, you might be suffering from what psychologists call truth bias – the assumption that most people tell the truth most of the time. They don't. Here are the signs to look out for…

Most people think other people are telling the truth more often than they are. This is known as 'truth bias'.

This unconscious bias is partly because the majority of people *do* tell the truth – at least most of the time. In the absence of any evidence to the contrary, it's logical to assume that people are telling the truth because the odds are that telling the truth is more likely. After all, why would they lie?

But people have many different and varied reasons for lying. A lot depends on the severity of the lie. From wriggling out of going for a drink with a friend, to lying about a criminal offence, or lying for personal gain – there is always some advantage to the liar. People lie because lying can be a better way, or a short cut, to getting what they want. Sometimes 'little white lies' such as the existence of Father Christmas or a certain product will make you more attractive can get children to behave better or customers to buy one item rather than another. But telling whoppers can persuade populations to go to war!

Lying works better when the risk of getting caught is low. Research has shown that people tend to weigh up the risks of getting caught before deciding to tell a lie. Most people tend to lie only when they feel they are unlikely to get caught and that's when lies become difficult to detect.

Most people like to think only other people lie and they they never lie themselves – even though deep down they know damn well that they do. The truth of the matter is that we *all* lie – even if we only do it once in a blue moon – another lie!

Dr. Chris Street, a researcher and Senior Lecturer in Investigative Psychology at the University of Huddersfield, has studied the cognition of social conflict. He believes the reason most people are so bad at spotting lies is because liars are skilled at covering up their lies.

Lies are much easier to spot if you have hard evidence that firmly contradicts the information you're being fed. Hard facts rather than say-so give clues to whether or not a

person is telling lies and are likely to continue telling lies. In other words, any contradiction gives an indication of their trustworthiness.

Interrogators, police officers and tax inspectors often start by asking questions they already know the answers to before moving on to questions they don't know the answers to. Police often withhold information from suspects to accurately gauge the degree to which they are lying, or are likely to lie.

However, the only real way to tell if someone is lying is to ask questions and look for inconsistencies that contradict known facts. Even without those facts you should stop yourself simply assuming people are telling the truth. If in any doubt, it's safer to keep an open mind. It's a hard fact, but most of the time, trying to spot whether someone is lying is no better than guesswork.

Telling a lie is a complex process. The brain has first to identify a truth and then suppress it before it can invent the lie and put it into words. This often leads to a longer pause than before a normal, direct and open response to a question. Verbal camouflage is employed – words and phrases such as *'well… er… why? How do you mean… Why are you asking me that?'* are dead giveaways.

Some body language experts and NLP enthusiasts claim that when we look up to our left, we're accessing recalled memory and when we look up to our right we are thinking creatively. This is not an accurate or realistic test because the direction of eye movements may depend on factors that cannot be known, such as left/right brain dominance, whether the individual is left or right-handed, or even learned behaviour.

However, people who are lying will often avert their gaze, looking in any direction other than at the interviewer.

Lying is stressful and it activates some of the mechanisms of fight or flight. The mouth goes dry, the body begins to perspire, the pulse rate increases and the breathing rate changes, leading to shorter, shallower breaths. All these physiological symptoms can be tell tale signs but not necessarily evidence that a person is telling lies – the room may too hot, or an individual may have been presented with some horrific evidence.

A liar will often over-perform – both speaking and gesticulating too much in a bid to be more convincing. These over the top body language rituals – like amateur theatrics – can involve too much eye contact (often without blinking!) and over-emphatic gesticulation.

All human beings are different and some people naturally prefer to keep a poker face even when they're not telling lies. But some go beyond the poker face and shut down their body language completely. What is needed is a record of benchmark behaviour – in other words, a guide to how this particular person normally behaves.

Liars often prefer to hide their faces. They do this by covering their mouth or putting their hand to their foreheads – especially if they suddenly find themselves in a hole. Lying is not only stressful, it's uncomfortable, and the body will sometimes compensate for it with 'comfort-touching'. This can take the form of rocking (in extreme cases) or stroking or playing with parts of the body such as the hair (or clothing) or twiddling wedding rings.

Fleeting gestures – including facial expressions – can also be a giveaway. They are difficult to spot but body language experts often film interviews and closely examine the footage later, slowing it down and zooming in, as the try to identify discomfort due to performed lies. The best way to spot these without the assistance of a camera is to observe the facial expression when the person has finished speaking. If someone momentarily pulls a face or

rolls their eyes, this can also be a sign they have told a lie, but not always – there could be a hundred reasons why this happens. Look for the facial expression that occurs after the liar has finished speaking. The mouth might skew or the eyes roll in an instant give-away.

Liars really struggle to control their hands and feet when they lie. If the gestures don't match the words – this is known as incongruent gesticulation – it's probably the hands and feet that are telling the truth!

Professional poker players know all about 'tells' – the subtle body language players use to try to deceive each other.

There are ways to tell if someone is lying to you. One to watch out for is if the other person starts to mimic your own body language.

We often imitate the behaviour of others unconsciously, and we become more likely to automatically mimic them if the brain is working hard. Because it's harder for the brain to be dishonest than to tell the truth, we tend to mimic our victims when we're being deceitful.

Researchers at Erasmus Universiteit in Rotterdam used motion capture to monitor the behaviour of liars as they told increasingly bigger fibs to someone else. As part of the study, which included researchers from the UK and the Netherlands, volunteers were monitored as they told the truth and as they told progressive lies.

The first experiment examined the effect of telling a truth and easy, difficult and very difficult lies on nonverbal coordination, that is, body language and movement. Nonverbal coordination was measured automatically through motion-capture data. In the second experiment, interviewees also received instructions that influenced the attention they paid to either the nonverbal or verbal behaviour of the interviewer.

Results from the experiments showed that interviewer/interviewee nonverbal coordination. That is, mimicking body language, increased with proportionally to the difficulty telling the lies. This increase was not influenced by the degree to which interviewees paid attention to their nonverbal behaviour or by the degree of interviewer's suspicion of lying, but by the way people rely on automated processes such as mimicry when under cognitive stress. Nonverbal coordination is the tendency to imitate the behaviours of others and this imitation takes place on both a conscious and unconscious level.

The amount someone coordinates nonverbal communications with someone they are interacting with depends on a number of factors – including common goals. There is evidence that the coordination occurrence is also affected by cognitive load.

Lying and/or deception – especially when fabricating accounts – is more demanding than telling the truth. Interactional nonverbal coordination increases as the amount of brain power required for the communication increases.

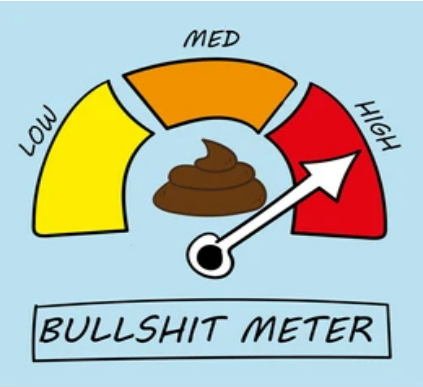
This is particularly the case when someone lies to a partner, and particularly when they tell big lies. Under those circumstances the liar was more likely to mimic the movements and actions of their partner as the lies got bigger. Nonverbal coordination is especially interesting because it relies on automatic processes and is thus more difficult to control.

So the more the brain has to work to spin a web of lies, the more the body automatically mimics the actions of the person you are lying to.

The findings have been published in the journal *Royal Society Open Science.*

There are lies, damn lies, and there's bullshit…

Bullshitters – people who try to impress, persuade or mislead people without concern for the truth, are very different from liars.



Experts on bullshit in Canada [this is true by the way!] found people who frequently engage in this kind of 'persuasion' – defined as deliberately attempting to mislead without lying outright – were also poor at identifying it. In fact the biggest purveyors of BS are the ones most likely to fall for it themselves! Ironically.

Participants in a 'bullshit experiment' were tested with pseudo-scientific statements and fake news headlines, and had trouble distinguishing profound or scientifically accurate fact from impressive but meaningless fiction. So a bit like NLP then…

Bullshitters – [the experts called them this, so don't blame me] were also much more likely to fall for fake news headlines such as 'Harry and Meghan's secret plan to abolish the Monarchy'.

But bullshitting and lying are two different constructs: Lying is a deliberate attempt to get someone to believe a falsehood where the liar knows the truth but doesn't want you to know it, and bullshitting is merely a deliberate attempt to mislead in order to impress, persuade, fit in, elevate one's position in the hierarchy, or sell more newspapers. The bullshitter may or may not know the truth but they don't care either way. Strangely, bullshitters find lying considerably less morally acceptable.

There are two distinct kinds of BS – persuasive and evasive.

Persuasive BS uses misleading exaggerations and embellishments to impress or persuade. Evasive BS involves giving irrelevant, evasive responses in situations where frankness might result in hurt feelings or harm to one's reputation. Persuasive BS is therefore more deliberate, cynical and arguably less forgivable than evasive BS. Persuasive BS is therefore more deliberate, cynical and arguably less forgivable than evasive BS.

To prove the point, the researchers conducted a series of studies with 826 participants from the US (the natural home of BS) and Canada.

The team examined participants' self-reported engagement in both persuasive and evasive bullshitting, and also their rating of how profound, truthful, or accurate they found pseudo-profound and pseudo-scientific statements and fake news headlines.

Participants rated the profundity of 10 randomly generated, grammatically correct, sentences that were constructed from abstract pseudo-profound buzzwords such as '*We are in the midst of a high-frequency blossoming of interconnectedness that will give us access to the quantum soup itself!*'

Participants rated 10 items that represent intentionally profound or motivational quotes such as '*A river cuts through a rock, not because of its power but its persistence*'.

Participants also rated 10 statements that convey actual scientific truths such as '*In a natural thermodynamic process, the sum of the entropies of the interacting thermodynamic systems increases*'.

And finally, the volunteers were tested for cognitive ability, cognitive insight, intellectual overconfidence and reflective thinking.

The results revealed that persuasive bullshitting was positively related to susceptibility to various types of misleading information. The more frequently someone engages in persuasive bullshitting, the more likely they are to be duped by misleading information – regardless of their cognitive ability, engagement in reflective thinking, or cognitive skills.

Persuasive bullshitters seem to mistake superficial profoundness for genuine profundity. If something merely sounds profound, truthful, or accurate – to them it really is. But in the tests, evasive bullshitters proved much better at making this distinction.

The research may help shed light on the processes underlying the spread of some types of misinformation, which has exploded to epidemic proportions on social media. The study was entitled '*You can't bullshit a bullshitter' (or can you?): Bullshitting frequency predicts receptivity to various types of misleading information*' – was published in the *British Journal of Social Psychology and in PsyPost*.

Overall, those who were better at making up bullshit explanations for things tended to have a higher cognitive ability than their peers. A person's bullshitting ability is positively associated with how smart they seem and how smart they genuinely are.

Bullshitting may have emerged as an energy efficient way of obtaining prestige, status, or financial gain in situations and places where success is determined by the subjective evaluation of others. This would include politics, public speaking and the arts and I can attest to the accuracy of all these experiments. I studied for four years at the Royal Northern College of Music in Manchester from 1975 to 1979. The place was full of pseudo intellectuals and bullshit artists, particularly in some of the arty cliques.

I remember attending a recital of 'new music' which frankly, was rubbish – a cacophony of random sounds and strange noises from instruments and singers. It was as if the whole group was making it up as they went along. Yet the response from the mainly student audience was rapturous. A few months later, I was ordered to play in one of these concerts myself – a composition of seemingly random dissonance which made no sense at all and sounded as if the composer had randomly flicked a load of ink spots on a blank manuscript. The percussion part, involving complex atonal passages on the xylophone and vibraphone, was extremely difficult and would require hours and hours of practice.

Unfortunately, I couldn't be bothered, so in rehearsals (of which there were many) and in the concert, I just made it up as I went along – bashing out a close approximation of what was actually written… and no one noticed. After the concert, I was congratulated on the *'sensitivity and strength'* of my contribution by none other than the composer himself. To this day, no one knows what I did.

So I know all about bullshit, thank you. My fascination with BS prepared the groundwork for my work as a stage hypnotist. And God forgive me, I have on several occasions in my life found myself talking pseudo-scientific bollocks to people who should have known better. The problem is, I enjoyed every minute of it! …and it's living proof that a person can go through the process of acquiring the necessary skills to succeed in a particular subject, or they can bullshit their way through it. In my defence however, I did end up playing with some of Britain's finest professional orchestras, including the Royal Liverpool Philharmonic Orchestra, the Hallé Orchestra, and the BBC Scottish Symphony Orchestra, where BS playing would have been spotted immediately.

At the University of Waterloo, Ontario, Researcher Kara-Yakoubian and colleagues conducted two experiments to look for associations between people's willingness to bullshit their ability and their levels of cognitive ability. In the first study, involving 483 students, participants were presented with the names of ten theoretical concepts, six of which were real, and four of which were fictitious. Real terms included 'cognitive dissonance' (the sense of discomfort felt when one holds two contradictory beliefs) and 'general relativity' (the theory that mass can distort the fabric of space and time, an effect experienced as gravity).

Each participant was asked to rate their knowledge of each of the ten concepts, real and fake, on a five-point scale that ranged from 'never heard of it' to 'know it well, understand the concept'. From their responses to the phoney theories, each subject was given a score based on their willingness to fake knowledge of the fake concepts.

The researchers then selected a subset of 220 of these participants – the 'BS Producers' – and tasked them to *'produce the most convincing and satisfying explanation'* for each of the ten concepts. They were instructed that if they were unfamiliar with a given term they were to creatively make up an explanation that they felt others would accept. These explanations were then assessed by another group of 263 volunteers and rated on a scale of one-to-five for both how 'accurate' and satisfying those explanations were. Then, based on the ratings of their descriptions for the fake concepts, each producer was given a 'Bullshit Ability Score' which were then compared to the results of tests of verbal intelligence, abstract reasoning and sensitivity to pseudo-profound statements.

The second experiment – which involved 534 undergraduate students – mirrored the first, with the addition that the participants in charge of ratings were also asked to judge the intelligence of the producer of each explanation. The researchers found that participants who were more adept at producing satisfying and seemingly accurate explanations of fake concepts also tended to score higher in tests of both verbal intelligence and abstract reasoning.

However, the team also found that the more intelligent people were, and by extension, the more artful their bullshitting, the less willing they actually were to make things up in the earliest part of the experiment, indicating that the ability to bullshit and the willingness to bullshit were independent of each other. Furthermore, the reluctance of smarter individuals to engage in bullshit might be explained by their greater capacity to attribute mental states to others – a skill which psychologists refer to as the 'theory of mind' which enables more intelligent people to be better able to decide when BS will work and when it won't.

The full study was published in the journal *Evolutionary Psychology*.

Always late? You could be mentally ill…

Being late is the height of bad manners… but is it really your fault? Yes… Probably.

When I was in my teens, punctuality was held as a virtue. My grammar school education taught me that lateness was the most inexcusable of all the sins. Attending the Royal Northern College of Music, punctuality was the first thing drummed into our heads – a talk by the principal on the first day made it quite clear that lateness would not be tolerated. Other transgressions, such as murder, were bad, but lateness was the one thing that would not be forgiven. This was good grounding for my short but successful career as a professional orchestral musician – after all, if one person is late, there are another seventy people sat waiting before they could start.

However, the definition of punctuality in professional life might not be what you think it is. Turning up at 10.00 for a rehearsal that starts at 10.00 simply isn't good enough – you are expected to start playing at 10.00, which means you must be sat with your instrument unpacked, tuned up and the music open in front of you ready for the conductor's first beat – the first note is played at exactly 10.00. Lots of professions work on this basis.

So in effect, 10.00 doesn't actually mean 10.00, it actually means 9.50, or 9.45, and if you have to 'set up', it can mean 9.30 or earlier. This is something you get used to and most musicians arrive very early – such is the dread, not to mention the embarrassment and shame of being late. Whilst working for the BBC in Manchester, in the orchestra music library, I once saw a principal player in the BBC Northern Symphony Orchestra fired on the spot because he turned up half an hour late to rehearsal. I don't think there was one person in the orchestra who had much sympathy – 'death is the only excuse' was a familiar refrain.

And so it is. In the wacky world of show business, you are expected to be there at least 90 minutes before the curtain goes up. If you're not, there ensues what can only be described as a period of increasing panic, followed by an unpleasant interview with the theatre manager, the severity of which will have nothing to do with the distance you have had to travel or the degree of lateness. Theatre managers, like orchestra managers, rely on one's professional courtesy. Cars breaking down, getting lost or stuck in traffic is an excuse held to be so ludicrous it's insulting to even offer it.

But according to scientist and writer Tim Urban, people who are consistently late may be suffering from a form of mental illness.

This theory offers a new and novel excuse and one I thought worthy of investigation. Apart from rudeness, selfishness, inefficiency and disorganisation, it also throws up an interesting conundrum.

People who are consistently tardy obviously struggle with linear thought processes and therefore must have a different attitude to how they view time. Tim Urban thinks that they may have a 'bizarre compulsion to defeat themselves' by making plans that they know they cannot or will not keep. He has even created an acronym to describe those people he believes are suffering from compulsive lateness – CLIPs… or Chronically Late Insane People. I have known only a very few and I can attest to how infuriating they are. The phrase 'Cape Town time' I find particularly irritating.

Mr Urban claims there are three reasons why CLIPs are so often late – some are in denial about how time works, some 'have an aversion to changing circumstances' and some individuals are 'mad' at themselves.

Straight away, I smell a dirty big rat, because I have always thought of CLIPs as being just downright rude, arrogant and in at least one case, the work of a psychopathic mind.

Turning human behaviour, even bad human behaviour into a 'condition' or a 'disorder' is a mistake, if only for the reason that it offers a too convenient excuse for bad behaviour. Personally, I hold that lateness is like addiction – it's a choice. Surely, working out what time you have to get up to get to a certain place on time can't be that difficult!? It's not because they *can't* do it – it's because they *refuse* to do it!

There is no genetic or evolutionary advantage to lateness – the meek may inherit the earth, but the late will miss out altogether.

Lateness smacks of a lack of structure, not to mention lack of manners. An inability, or refusal, to adequately plan ahead is something that habitually late people have in common.

Chronic lateness however has to be viewed in a different way from say, chronic bad handwriting or chronic failure to iron your shirts, because lateness has a direct (and unfair) effect on others.

It's possible to cure chronic lateness in children by employing the old tried and tested systems of reward and withdrawal of reward. If you're on time, you get merit points that in turn lead to a greater reward. If you're late, you miss out on some enjoyable activity such as playing on the school football team. Chronic lateness in adults is normally easy to deal with – consistently late employees miss out on promotions and pay increases – they also get fired more often… for lateness.

It's possible that the mental pathways responsible for chronic lateness originate in the same part of the brain that's affected by those who suffer with Attention Deficit Hyperactivity Disorder (ADHD). In fact, many ADHD sufferers complain they struggle to keep time. But then again, many ADHD sufferers are merely ill disciplined, something that is also curable with the right approach.

Some psychologists believe that chronic lateness could be a symptom of an underlying mood disorder such as depression. A recent study of more than 200 people carried out at San Francisco State University showed that 17% of depressives were also chronically late. Then again, depressives have a tendency to want to withdraw from the world, and often get to the stage where they can't be bothered to make an effort to do anything, never mind turn up on time, if they turn up at all.

Those unable to be punctual displayed similar patterns in behaviour including anxiety issues and difficulty regulating self-control, especially when it comes to things like over-eating, smoking or even personal cleanliness. Researchers claim that the problem, whether it affects a person personally or professionally, is reversible. For what it's worth, I agree. I've had clients who just needed a push (or maybe a kick) in the right direction.

Psychologists recommend those affected with chronic lateness start the change by making 'to do' lists and make deadlines for completing tasks non-negotiable. They should also monitor how long it takes to perform certain tasks and always plan to be early, just like normal people. And most important, develop an interest in something they look forward to.

Some psychologists are sceptical about the claims that chronic lateness is a medical condition and view it as more of a behavioural problem, as do I, and for all the reasons above. So shame on the chronically late who continue to take advantage of our good natures – and shame on those who put up with it.

A ex girlfriend friend of mine had this irritating habit of just doing 'one more thing' before going anywhere, which is why she was destined never to get anywhere and why she became my ex-girlfriend… or as I called her, my late girlfriend. Missing a flight because you suddenly decide to go shopping on the way to the airport is not only rude, it's insane!

In the unlikely event that you're reading this Alex, you were the most unreliable and infuriating person I ever met and being with you was the worst three weeks of my entire life. You turned being late into an art form, which explains why you could never hold down a job for more than a week and why you had no friends…

We all need structure in our lives and so most of us have the ability to estimate time – how long things will take, how long it takes to get somewhere, how much traffic to expect, and what time check-in closes. But some very clever scientists at Washington University have informed me that it wasn't your fault after all. How utterly selfish of me to think it was – even when I was sat alone in business class, sipping champagne, not knowing (or caring) if you were alive or dead.

You see, chronic lateness is due to a problem with someone's Time-Based Prospective Memory (TBPM). TBPM is when your memory is jogged by a time-related cue – for example, when you need to get to the airport by 11am, remembering to occasionally glance at your watch. For most people, this is not too difficult.

By studying the time management strategies of older and younger adults, the scientists found that some people are better at estimating time than others. It turns out there are ways to break the habit of always being late – including not calling in to see your friend 'for a quick chat' who lives near Terminal 3.

The scientists tested for TBPM by giving some volunteers a task to perform and a specific amount of time in which to complete it. During the test, the volunteers were allowed to check a clock before the time ran out.

While it may seem like most people would check the clock, the experiment was designed in such a way that the complexity of the task was increased, causing the participants to become engrossed in it. In other words, it was just like the time when, instead of packing your case, you allowed yourself to get distracted by suddenly deciding to do your make-up – something not as important as getting to the gate before they close the flight and no longer allow you onto the plane.

It turns out that people who are better at TBPM tasks are better at remembering to check the clock. Remember how you used to go on at me for looking at my watch?

OK, checking your watch is only one way to be on time. You see, it's also important to be able to estimate how long it takes to get from one place to another – accounting for potential problems like getting stuck in traffic. Remember that? I was swearing and constantly checking my watch, and you were listening to *Westlife* and filing your nails at the same time. Multitasking you said it was, although as it turned out, multitasking wasn't going to help us get to the airport any quicker.

Anyway, the boffins devised some fiendishly clever experiments to prove that listening to music and doing your nails at the same time makes you forget to check the time. Who would have thought it?

In the first experiment, some volunteers were given a set of 'Who Wants To Be A Millionaire' style questions to answer, and they had to estimate how long it would take to complete them. While one group answered the questions, songs were played. While the second group answered the questions, songs were only occasionally played. The purpose of the exercise was to find out whether the volunteers who listened to songs would lose track of time while completing the quiz (you would have been good at this) and whether listening to fewer songs caused them to be more aware of the time.

In the second experiment, the volunteers were asked to complete a jigsaw puzzle. They were told that after getting as far as they could with the puzzle, they would have 20 minutes to complete the quiz. They had to finish the quiz and push a button after 20 minutes had elapsed. In other words, they had to manage their time doing the puzzle to have enough time left over to complete the quiz. [You would have been totally terrible at this, and it brings a smile to my face when I think about it.]

Anyway, the very clever scientists found that some people are better at estimating time than others, and that playing music had an impact on the time-awareness of younger people. But they also found that younger people checked the time more than older people.

So the main factor affecting people being too early or too late was their ability to estimate time. According to the research, there are three things you can do that can help reduce ones own 'time estimation bias'… or being lazy, rude and inconsiderate as some other scientists might say.

The first is to simply check the time every so often. The second is to construct a strategy for getting things done. This involves a bit of common sense and planning ahead of time how long each part of doing something will take.

The third is to resist the temptation to do 'one more thing' – in your case, losing track of time in the Duty Free area – before you suddenly remember you have to be at the gate. That way, you won't get stranded in Dubai without a passport or your ticket. I hope you managed to get home eventually, because I didn't actually hear from you again as I had taken the precaution of blocking your number.

But maybe it taught you a lesson… Remember the five P's – proper planning prevents poor performance! (And gets you home on time.)

I’m not a morning person…

New research shows that whether you’re a morning or an evening person really does depend on the hour of your birth. It might also help to determine a wide range of other crucial characteristics such as your intelligence, creativity or the likelihood of you becoming an artist or a criminal. It may even determine if you’re more likely to become depressed, develop ADHD or prone to diabetes.

Around 15% of the population are night owls and about 15% are early birds, while the remaining 70% fall somewhere in between. The bad news is that if you’re a night owl trying to live an early bird’s lifestyle, you may be running the risk of ill health.

A team of psychologists from Cleveland State University in Ohio have investigated the relationship between time of birth and physical and mental make-up. To do this, they gave large groups of students mental-performance tests in the morning and again late in the afternoon. Then they compared the test results and the student’s health records against their time of birth.

Amazingly, the results matched – the students born in the morning scored better in the morning tests while those born later did better in the afternoon tests. These are significant results suggesting that a critical moment in setting the biological clock for alertness may indeed be the moment of birth. The findings have been reported in the *Journal Of Social Psychology*.

If the body clock is set when a baby is first exposed to the light of the world, the person’s circadian rhythm may be set for the rest of their life.

In addition, adults who were born prematurely are much more likely to be ‘extreme’ larks who habitually wake early and always seem ready and raring to go. A study of adults in their mid to late 20’s carried out by Dr Sonja Strang-Karlsson, a premature birth expert at Helsinki University, found that people who were born with very low birth weight naturally wake up on average 40 minutes earlier than everyone else. So how come their body clocks are so advanced?

Light seems to play a crucial role. Twenty years ago, it was standard practice in neonatal intensive-care units to leave the lights on all day and night. This seems to have set infant’s body clocks fast. It is only recently that hospitals have started to turn lights on and off and follow the outside world’s natural rhythms.

But those extreme lark children should have little to complain about. Dr Strang-Karlsson's study concludes that 'Morningness' is associated with better health. Annoyingly for sleepy-eyed night owls, their jealous suspicions about larks being super-efficient goody-goodies seem to be true.

In a 2014 a study led by psychologist Dr Ana Adan at Barcelona University was published in the journal *Personality and Individual Differences*. It involved 700 people aged 18 to 32, and found that morning people tend to be more persistent in pursuing tasks. They are also more resistant to fatigue and frustration. These characteristics make the larks more likely to experience better life satisfaction and lower levels of anxiety. This makes them significantly less likely to get involved with drugs or other addictions.

A similar study of more than 600 Britons, conducted in 2007 by Surrey University's Sleep Research Centre, concluded that morning people are more conscientious. The ancient Greeks must have noticed this too because the astrological texts they wrote 2,000 years ago say that people born under the sun (during the day) were far better at practical and business-like tasks, while those born under the moon (during the night) should be left to simpler stuff, such as looking after livestock!

However, it's not all bad news for us night owls because evidence from a number of studies shows they tend to be more intelligent, creative and novelty seeking. A survey of 420 people carried out by Sydney University discovered that contrary to conventional wisdom, evening types were more likely to have higher intelligence scores.

But that's where the good news ends for wise night owls. The rest of the evidence concurs that they tend to be a bunch of ailment-prone neurotics, prone to burnout and mood problems. Another study warns they are more likely to be aggressive and antisocial in their youth. They are more likely to suffer from depression or develop ADHD.

Barcelona University's Dr Ana Adan says a fundamental problem experienced by night owls may be caused by what she describes as 'social jet-lag', a condition where one's body clock runs at a different time to the demands of the rest of society. Dr Adan believes that evening types are well-known social jet-lag sufferers and they are often forced to adapt to the mainstream social schedule which tends to be biased towards nine-to-five.

Chronic social jet-lag places a heavy toll on the brain, which may be why night owls are significantly and statistically more likely to go off the mental rails. Worse still may be the physical effects, particularly for people who have to fight their natural body clocks to get to work each morning.

A major study of more than 64,000 women conducted in 2015 by Harvard Medical School discovered that night owls have a significantly increased risk of developing type 2 diabetes if they have to work shifts that start early. This might be due to long-term inflammation in the body, which is a known cause of type 2 diabetes and can result from being chronically tired. So, it's obviously much healthier for night owls to be allowed to function at their best during the hours that match their body clocks.

There is also another factor that affects these human attributes, and that is the way in which babies are born. When women are left to give birth naturally, the peak time for going into labour is about two o'clock in the morning. Babies who are born in the morning are usually the result of a short labour, while those born in the afternoon or evening most often undergo a long delivery. As a result of modern obstetric practices, the majority of babies, at least in the West, are now born during the day. This is because complications and

deaths are more likely to occur at night and at weekends, when there are fewer expert staff on duty.

The balance between morning larks and night owls is shifting in the larks' favour. That may bode well for creating a more ordered society, but it could also mean a society with less intelligent and creative people who can contribute untold and undiscovered knowledge and wealth. Of course we need a population that works nine-to-five – they make ordered and functioning life possible, but we also need people who can make contributions that make life worth living!

What midlife crisis?

There is very little evidence the 'midlife crisis' exists.

Professor Nick Haslam, of the University of Melbourne, claims midlife is a time of growth that 'requires a process of adjustment' and that 'unsurprising' studies have shown older adults choose midlife as the phase they most prefer.

Writing in *The Conversation*, Professor Haslam argued there is no set mid-point in life and 'crises' that occur could happen at any other time. Concepts of middle age are elastic and change as we get older so it's almost impossible to predict when midlife crisis might occur.

However we define midlife, studies suggest self-reported crises simply become more common as we age. There is also evidence life gets more positive around this time, as the personality becomes more stable. A Swiss study, published in *Gerontology* in 2009 showed that older participants reported their midlife crisis to have occurred later.

Psychoanalyst Elliot Jaques, who invented the term 'midlife crisis' in 1965, thought it might reflect the first recognition of death. But others suggest it could be related to children flying the nest, having to care for ageing parents, work demands, or the onset of chronic illness. It could also be biologically rooted, considering chimps and orang utans show signs of a dip in mood around a similar age. A study, published in 2012 by international researchers, found that monkeys found the least pleasure in social activities at this age.

Crisis episodes may not be tied to adverse self-proclaimed crises. Generally, people go through a positive transition in what they perceive to be their midlife. Generally, changes during midlife are positive. Personality becomes more steady and self-accepting, while positive emotion, on average, gradually rises through life and most change during midlife is positive.

One study, published in the journal *Assessment* in 2000, found American woman from the age 41 to 50 became more resilient as they aged, as they became less neurotic and self-conscious. Middle age may be dislocating for some but there is little evidence it is usually a period of crisis and despondency. It's understandable that people may start to re-evaluate their lives.

Psychologically speaking, things tend to get better as we age.

Schadenfreude explained

Why we find other people's misfortunes funny…

Schadenfreude is a German word meaning 'harm joy' and it's an oft misunderstood pleasure people get from the misfortune of others.

Ironically, English people experienced extreme Schadenfreude when England beat Germany 4 – 2 in the 1966 World Cup final. Schadenfreude may be a German word, but it is the British who really understand its deeper meaning.

Psychologists have long struggled with how to best understand, explain and study schadenfreude the strangest of all the emotions that can arise in such a wide range of situations, none of which seem to have any unifying framework or a unified definition.

Schadenfreude represents a kind of amusing poetic justice, even justified revenge with a satisfying or ironic comic twist.

There is evidence that four year-old children find other's misfortune – like tripping and falling into a muddy puddle – funnier if that person had previously done something to hurt other children, such as breaking their toys. Researchers have also found that two-year-olds primed to be jealous of a peer experience glee when that peer suffers a mishap. And by the age of seven, children feel more pleased if they won a game against a rival.

In a 2013 study, researchers had nine-month-old infants observe puppets interacting with one another. Some puppets 'enjoyed' the same types of food that the infants enjoyed, while others had a different set of tastes. When some puppets 'harmed' the other puppets, the researchers saw that the infants would rather see the puppets who didn't share their tastes be hurt over the ones who did share their tastes. All these studies show that schadenfreude is an emotion that appears deeply ingrained in the human condition.

The evolutionary human survival strategy dictates that people often view their own group in more human terms and unconsciously deny the humanity of those from other groups. Over the course of human development, this mindset has resulted in torture chambers, wars, mass murder, ethnic cleansing, pogroms and concentration camps… but then those are neither 'just deserts' or funny.

Give me the banana skin or the custard pie any time!

Why we crave the company of others

Why social interaction is rewarding and why it's possible to die of loneliness.

People crave company when they are socially isolated, such as happened during lockdown.

Social interactions are rewarding and images of smiling faces or people chatting engage the brain's dopamine-based reward system. Previous research showed that mice exhibited increased responses in the midbrain dopamine system when interacting socially after a period of isolation.

Researches at the Massachusetts Institute of Technology monitored 40 participants who underwent ten hours of social isolation followed by ten hours of fasting. After each session, each volunteer reported whether they felt lonely, longed for social interaction or were hungry. The team also fMRI scanned each participant's brain activity while the subject looked at images of either social interactions, food or flowers.

Unsurprisingly, the test subjects reported having heightened social cravings following their isolation period and increased food cravings after the fasting period. The team also found that part of each participants' midbrain – one associated with reward and novelty response exhibited greater responses to social images after isolation and to food images after fasting – the lonelier or hungrier the subjects reported feeling, the bigger the response. There was little response when the participants were shown the images of the flowers.

In early 2020, millions of humans experienced a sudden government-mandated period of relative or complete physical isolation. This unprecedented upheaval highlighted the need for better understanding of the underlying neural mechanisms of social isolation.

The full findings of the study were published in the journal *Nature Neuroscience.*

It is possible to die of loneliness. A major study published in March 2018 suggested social isolation can increase the chance of a stroke by 39% and premature death by 50%. Loneliness may also raise the risk of a heart attack by more than 40%. Those who already had cardiovascular problems were far more likely to die early if they were isolated, suggesting the importance of family and friends in aiding recovery. The research team, which included British academics, said lonely people had higher rates of chronic diseases and smoking and showed more symptoms of depression.

Give us a cuddle!

Romantic people have a genetic mutation that produces more 'cuddle hormone' – otherwise known as oxytocin. The mutation boosts the romantic mood, urges people to form relationships and makes them more likely to fall in love.

Oxytocin, known as the 'love hormone' or 'cuddle hormone', engenders trust and generosity.

The chemical is released naturally from the brain into the blood of humans and other mammals during social and sexual behaviours. It is produced by women during labour to help them bond with their baby, and stimulates the production of breast milk. The chemical is also released during love-making.

Other loving activity, from hugging a teddy bear to stroking your pet dog, also trigger the hormone's release.

Researchers from McGill University, Quebec, focused on a gene called CD38 which fuels oxytocin and found those with two copies of the gene were more affectionate. Those that have this genetic mutation are also more likely to spend a greater amount of time eating, drinking, talking and watching TV together than those without the gene.

It isn't just the people with the mutation that it affects… the researchers found that from a study of 111 couples, those with the mutation also found their partner more caring even if they didn't have two copies of the gene. They were also more likely to overlook mistakes, swallow their pride, and give in to requests – a phenomenon known as 'relationship adjustment'.

They were also more likely to see their partner acting the same way even if their partner didn't have the same genetic code.

The McGill University study concentrated on couples who had been together for an average of five to six years. Each couple were asked to report their social behaviours and their perception of their partner's social behaviour for a period of 20 days. Out of the 222 individuals taking part in the study, just over half also provided genetic information.

The CD38 gene has two variants, or alleles – A and C. Every person has two copies – one inherited from each parent.

Alleles are forms of the same gene with small differences in their sequence of DNA bases and the gene can be present in three combinations – AA, CC and AC. Volunteers who inherited a double dose of the 'genotype' CC reported higher communal behaviour than carriers of AA or AC, indicating the variations may play a key role in behaviours and perceptions that support bonding in humans.

Those with the genetic variant also experienced fewer negative feelings such as worry, frustration or anger than their peers. They also rated the quality of their relationship as better – and more supportive.

Given the significance of close relationships for human survival, it is thought biological mechanisms evolved to support their initiation and maintenance.

Individuals with the CC allele reported higher levels of communal behaviour across their daily interactions with their romantic partner. They also had higher levels of ‘relationship adjustment’.

The McGill findings support the role of oxytocin in the interpersonal processes implicated in the maintenance of close relationships, adding to increasing evidence genetic factors play a role in the formation of relationships.

There are now dating websites which have been launched to combine genetics and matchmaking!

Other studies have shown identical twins, raised separately, rate the overall quality of their marriages similarly. This suggests an enduring genetic contribution to marital life.

Oxytocin, sometimes also known as the 'love hormone', also plays a significant role in emotional attachment – flooding a new mother at the birth of a child with affectionate and tender emotions – and also spiking during sex.

Decades of research on mice and socially monogamous prairie voles indicate oxytocin boosts romantic bonding.

This means that CD38 – a gene linked to oxytocin secretion and social behaviour in rodents – is also involved in regulating human romantic relationships as they unfold in daily life.

Specifically, it is associated with individuals' communal behaviour, such as the expression of affection in daily interactions with a romantic partner.

The full study was published in the journal *Scientific Reports.*

A sense of humour can keep us together

Why highly moral people don't get the joke…

Mark Twain famously once said '*there is no humour in heaven*' and new research has found it could be true.

Although people with highly moral traits are often viewed positively, they might also be viewed as sanctimonious, prudish or even untrustworthy. Highly moral people are also often unable to appreciate a joke, something that can also make them unlikeable.

As noted in the opening quote by Mark Twain that 'there is no humour in heaven', there is a tension between morality and humour.

Researchers have investigated the links between laughing at jokes, making jokes and people's sense of their own morality. Experimental and field data indicate that such tension not only means that morality may impact upon humour, but that it can come at the expense of likeability and popularity. So morality can have a downside that has previously been overlooked.

Researchers tested the theory that a lot of humour comes from violating traditional social rules, and that this led to tension in people who strongly adhere to those rules. Although highly moral individuals should be no less likely to engage in forms of humour that do not involve any moral violation – for example harmless linguistic puns – their avoidance of more off-colour jokes that challenge moral norms may mean they will be seen as humourless. For instance, more moral people might be less likely to let themselves laugh at the joke *'I once farted in an elevator… It was wrong on so many levels'.*

Virtuous people are less likely to appreciate humour and tell jokes others find funny, especially those that involve benign moral violations. People with a strong moral identity do not generally compensate for their lack of humour by telling more jokes that do not involve moral violations. Employees and leaders with strong moral identities who display ethical leadership are perceived to be less humorous by their coworkers and subordinates – to the extent that they are less liked in the workplace.

However, the studies found leaders with strong moral identities although perceived as less humorous were seen as more trustworthy. Having moral employees and leaders can come with many benefits, including a sense of humour and associated likability in the workplace.

A bit of what you fancy does you good…

Giving in to temptation every now and again leads to a happier, more successful and more satisfied life.

Psychologists at the University of Zurich, Switzerland – home of some of the world's tastiest chocolate, including Toblerone, a confection inspired by the Swiss Alps – say that although a little hedonism might not be the same as fulfilling a long-term goal, it does make life a bit more enjoyable. They also claim that strict self control is NOT the only way to live a happy life.

The capacity to experience pleasure and enjoyment is a sign of leading a satisfied and happy life. Treats might not help you live longer or get richer, but it can make you happier. Self-control is important, but research on self-regulation should pay just as much attention to hedonism or short term pleasure.

Using a psychological questionnaire volunteers were tested on how they respond to temptation and if it distracts them from their long term goals or their overall wellbeing. Some people set out to lose weight, do more sport or improve their mind, but when relaxing they worry if they should be exercising instead. Moreover, their sense of wellbeing was lower than those who were able to switch off and enjoy themselves without thinking about what they should be doing.

In short, people who can enjoy life's little pleasures are less likely to suffer from depression and anxiety, because they can have fun without worrying about the consequences. One must try to achieve a balance and work towards long term goals but not feel guilty taking time out to go for a drink, have a pizza, or simply watch TV. The pursuit of hedonistic and long-term goals needn't be in conflict – both are important and can complement each other to achieve health *and* well-being. It's all about finding the right balance.

The researchers said their findings also apply to worrying about work when trying to relax – a common issue in this high tech age which has made it harder to switch off. The answer is to allocate downtime and set limits on the amount of time spent working or advancing longer term goals.

The full research was published in the journal *Personality and Social Psychology Bulletin*.

Holding hands (and swearing) eases pain

Researchers at the University of Colorado believe that when lovers touch, and their breathing and heartbeats synchronise, feelings of pain can also disappear.

It is well known that people unconsciously sync their footsteps with the person they're walking with or adjust their posture to mirror a friend's during conversation.

Scientists believe that merely holding hands with a loved one activates an area of the brain called the anterior cingulate cortex, which is associated with pain, empathy and heart function.

To test the healing powers of a lover's touch, researchers asked couples to take part in an experiment where women were subjected to pain, and they discovered that if the woman's partner was allowed to hold her hand, she reported feeling lower levels of pain than if the couple merely sat next to each another. It seems that the more empathic the partner, the stronger is the effect when they are touching.

Recent studies have shown that heart rates and respiratory rhythms synchronise when partners watch an emotional movie or sing together, and further research has also shown that when romantic couples are simply in each other's presence, their cardiorespiratory and brainwave patterns sync up. However, as far as singing together is concerned, it's understandable that breathing will be in sync because they will both be singing the same words to the same tune, the same rhythm and taking the same opportunities draw breath.

The University of Colorado study was the first to explore interpersonal synchronisation in the context of pain and touch. Researchers hope it will help healthcare providers find drug-free pain relief options. The study of 22 couples is the latest in a growing body of research on 'interpersonal synchronisation', the phenomenon where individuals begin to physiologically mirror the people they're with.

The same is true when leaders and followers have a good rapport – their brainwaves fall into a similar pattern. Rapport is important when people take part in therapy, particularly in hypnotherapy. Good stage hypnotists, especially those who are good at establishing rapport with an audience, can control the rhythms of an audience, its emotional ups and downs, and in time will submerge nearly every member of that audience into the larger collective organism of the group.

Dr. Pavel Goldstein, who led the study, said he got the idea when his first child was born. Wanting to ease his wife's pain, he reached out and held hers, something that seemed to ease her pain. *'It could be that touch is a tool for communicating empathy, resulting in an analgesic, or pain-killing, effect'.*

To test the theory, he recruited 22 long-term heterosexual couples, aged 23 to 32, and put them through a series of tests aimed at mimicking the delivery-room experience. Both partners' heart and breathing rates were measured while they either sat in separate rooms, sat together without touching, or sat together holding hands. The researchers repeated all three scenarios while the woman was subjected to a mild heat pain on her forearm for two minutes.

As in previous studies, the study showed couples synced physiologically to some degree just by sitting together. But when the woman was subjected to pain and the man couldn't touch her, the synchronisation was non-existent. When he was allowed to hold her hand, their rates fell into sync again and her pain decreased.

If pain interrupts this interpersonal synchronisation between couples, then it seems touch brings it back.

Dr. Goldstein's previous research found that the more empathy the man showed for the woman, the more her pain subsided during touch and the more physiologically synchronised they were, the less pain she felt.

However, it's not yet clear whether decreased pain is causing increased synchronicity, or synchronicity is responsible for decreased pain. It might be that touch is a tool for communicating empathy, resulting in an analgesic (painkilling) effect. Further research is needed to fully understand how a partner's touch eases pain, but for now, Dr. Goldstein suspects it is a lover's touch that affects the anterior cingulate cortex, associated with pain perception, empathy, and heart and respiratory function.

The study did not explore whether the same effect would occur with same-sex couples, or what happens when the man is the subject of pain but Dr. Goldstein plans future studies.

Many people's experience is that pain can subside if someone is 'sharing' that pain. This is as true when the pain is emotional as it is when the pain is physical. Nonetheless the research will help lend scientific credence to the notion that touch eases pain.

The research was published in the journal *Scientific Reports*.

In the meantime, Researchers from the universities of Keele and Central Lancashire have confirmed that swearing actually raises tolerance to pain, something which I can attest to because of my vast experience. I know for example that swearing seems to reduce frustration. I often swear at my computer and at Mark Zuckerberg, something that seems to help both reduce levels of frustration and act as a 'reset' button enabling me to start over to solve whatever technological puzzle they have chosen to throw at me this time.

In Japan, swearing – even when in pain – is seen as culturally unacceptable behaviour, unlike in the UK, where swearing is a normal response, not only to pain, but also to disappointment – for example, when one's football team loses an important game.

To prove their point, the researchers recruited a group of volunteers from the UK and Japan to take part in a simple experiment.

The participants were all asked to immerse their non-dominant hand in ice-cold water and keep it there. Half were told to repeatedly use a swear word, either in English or Japanese, while the other half used neutral non-swear words. Both Japanese and British participants were more tolerant of the painful stimulus when they were allowed to swear – 78.8 seconds for those who swore with abandon, compared with 45.7 seconds for those using a neutral word.

One theory is that swearing stimulates the fight-or-flight response to threats, resulting in increased heart rate and tensed muscles. Part of this reaction is a dulled response to pain. Another theory is that swearing increases levels of emotion capable of reducing the sensation of pain.

The research was reported in the *Scandinavian Journal of Pain*.

Researchers at The University of Health Sciences, Medical Informatics and Technology in Austria applied pressure to the fingernails of volunteers. Forty-eight straight couples were recruited by the researchers. One person from each couple went through experiments in which their index finger was put into a machine. A device slowly added weight onto the fingernail until participants gave a stop signal (presumably by saying ‘stop’) when the pain became too much. They rated how painful the pressure was on a scale of one to ten while their finger was trapped under 6.6lbs (3kg) of weight.

The test was repeated three times – when they were alone, when a researcher was present, and when their partner was sitting one metre away from them. The couples were able to make eye contact but not speak to each other. Perhaps unsurprisingly, they found that the participants were able to tolerate more pain when their loved one was with them in the room than when they were alone. Their romantic partners weren't allowed to hold their hands or speak to them, but were allowed to make eye contact.

Talking and touching have been shown to reduce pain, but this research shows even the passive presence of a romantic partner can reduce it and that ‘partner empathy' may buffer effective distress during pain exposure. The results confirm the analgesic effects of social support, which may even occur without verbal or physical contact.

After the study, the couples answered a 16-part questionnaire that assessed how empathetic each individual was. Participants who had empathetic partners appeared to have a greater increase in their pain tolerance than those who did not.

It could be that day-to-day experience with a highly empathetic partner leads to a general expectation of their compassion and emotional support in threatening situations, in which case, the sole presence of the partner may reduce distress and pain sensitivity. They also added that pain might be reduced by being distracted by a partner.

So now, I’m wondering if this is why children stop crying when they’ve hurt themselves and and are comforted by their parents. Parents show empathy for their children, children sense that empathy and are comforted by soothing words and touch, particularly if the parent behaves in a way that makes the child feel protected. Certainly distraction works with very young children… When I child trips and hurts itself, parents often distract their infant from the pain to something more interesting, like a flock of birds, or a big truck, or… well, you get the idea.

No more Mr nice guy

Does being nice to people really make us happier? Not always…

Most companies train their staff to smile and be polite to customers, even when customers are rude, ungrateful, surly, demanding and awkward. But a two-year research programme carried out by the University of Frankfurt am Main proved beyond doubt that when people suppress their true feelings, especially for extended periods of time, there can be negative consequences for their health.

When customers are rude and workers keep smiling, it is the workers who become stressed. But the Frankfurt researchers go even further, claiming faking happiness leads to burnout, depression and in extreme cases, can accelerate the onset of heart disease.

To prove the point, the performance of 4,000 staff was assessed at airports, hospitals and call centres. Half the volunteers were told that they must smile and be polite at all times and the other half were allowed to answer back to customers.

Tests carried out during their shifts showed that those who were allowed to express themselves honestly displayed only a slightly increased heart rate, but those constrained to politeness found their heart rates noticeably increased at the end of the encounter.

So, should you succumb to temptation, stand up for yourself, look after Number 1 and get back at people who have pissed you off… or should you put others first and turn the other cheek?

Maybe there's an evolutionary reason we are tempted to get back at people, possibly to keep them in their place. Maybe there's also an evolutionary reason in favour of altruism. Maybe evolution dictates that there must be a balance between the two. Altruism may indeed be good for the many, but looking after Number 1 might be better for personal sanity. Maybe our ancestors found that maintaining a balance between the two was the best way of keeping the peace.

Richard Dawkins is someone I don't particularly like – belonging as he does to the 'I'm right and you're wrong' school of scientific inquiry. He's on my bucket list of people I would like to slap before I die. But his view that altruism is part of human evolutionary survival strategy is difficult to dispute.

That altruism benefits the recipient is indisputable. But altruism also benefits the donor by increasing levels of personal wellbeing by easing the conscience. People who are ‘good’ and ‘kind to others’ earn a reputation for being good and kind people and are thus held in higher esteem by their group.

Altruism has been linked to higher personal satisfaction with life and greater happiness… and lower levels of depression. There is lots of hard evidence connecting altruism and social cohesion. There is also a strong positive relationship between altruism and physical health, including reduced mortality rates in groups that lean toward altruism.

As with a host of other healthy activities, from exercise to the appreciation of music, maintaining relationships requires an investment of personal resources. These include giving valuable assets to others such as time, energy or money.

Giving and sharing has advantages for all members of the group, so it’s good for us too, right? But do the benefits of giving and sharing really outweigh the costs?

We know that we are more likely to receive support from fellow group members during times of stress or crisis if we have helped and supported them in the past. The ability to identify with groups and their members provide us with a sense of purpose in life. This is true of *all* groups, whether religious, musical, sporting, or even groups of conspiracy theorists.

Evolutionary psychologists have come up with the ‘altruism hypothesis', which proposes that helpful group members tend to be perceived as deserving high status and are more likely to be selected as partners with whom to interact and cooperate.

So it could be that being helpful to others within a group can be seen as a 'costly signal' – a behaviour that consumes resources, but which ultimately signals the person's positive aspects to the other group members – kindness and consideration buying status in the group.

This kind of trade-off can be seen in the animal kingdom where members of some species have learned to cooperate. Meerkats take turns acting as lookouts while the rest of the group eat and play. Gorillas look after each other’s young – as do humans – and Elephants help each other in order to protect their young calves.

It is possible that the popularity of altruistic individuals increases their chances of reproducing and passing on their genes, making altruism an evolutionary advantageous behaviour – group connections are fostered through giving and receiving assistance that benefit health and wellbeing. This also applies to helping those who are not part of our immediate group, such as refugees. Such actions help to show people in our own group that we are generous, intelligent, and therefore desirable.

So, identifying with social groups and their members provides us with a sense of purpose in life, as well as the knowledge that we will be likely to receive support from fellow group members during times of crisis. This suggests that any costs involved in being nice are ultimately outweighed by its advantages.

But… it is possible to be too nice. For example, where people become overburdened with the need to care for, or provide for others, it can change the nature of the relationship.

Here is an example: a young swimmer gets out of her depth in heavy surf and is drowning. Just when she’s giving up hope, one man swims out and saves her life. Both make it back to shore, both exhausted, both lucky to be alive. They hug and exchange contact details. A

few weeks later, the man calls the woman he saved and explains that he needs $1,000 for his daughter's operation. Of course the woman understands and immediately sends him the money. A month later, the man telephones again and asks for another $500, this time to take his sick mother on one last holiday. Question: at which point is it appropriate to say 'No?'

This sort of decision is often present in people who spend a lot of personal time helping others. We understand that helping others is important, but not if it leads to a point where the burden is unreasonably great or burnout. Striking a balance between helping others and looking after your own personal wellbeing equally important.

Sometimes we need to focus on the people in the social group we identify with most strongly. In this context, the people requiring help are also likely to receive support from other group members – reducing some of the pressure.

Of course being nice is also about having a pleasant attitude and refraining from non-aggressive, manipulative or vengeful behaviour. But the evidence for this is not always clear-cut. Feeling and suppressing anger is bad for physical health and can even cause depression.

The overall message is to try and avoid becoming angry, while retaining the ability to express your anger or dissatisfaction in an appropriate way. Those who lose their temper usually feel some sense of regret or remorse afterwards. That is also part of the human survival mechanism. Feeling down after an argument reminds us to take care not to do it again.

Bad news is better delivered straight

You shouldn't beat about the bush when delivering bad news.

A study from Brigham Young University, Utah, confirms that you shouldn't beat about the bush when delivering bad news.

Psychologists looked at the best way to deliver bad news, and found that most people prefer directness. In fact, pussyfooting around just prolongs the agony.

Speech is less than half of communication – you don't need a degree in psychology to know when someone's flirting with you or when you're in a threatening situation. Neither do you need to be an expert in body language to know when there's something wrong – subtle facial expressions nearly always give the game away, along with tone of voice. People will naturally feel apprehensive when faced with an extended or overly preparatory lead-in.

In the case of a break-up, psychologists advise that a simple 'we need to talk' is enough of a buffer to soften the blow because just a few seconds gives the other person a chance to process the idea that bad news is on its way. A direct *'I'm breaking up with you. Goodbye loser'* is perhaps a little harsh, although it has been known to work – as has the expression *'it's not me it's you… see you around*'. Some kind of warning will lessen the shock. *'Can you give me a hand with these suitcases?'* might be better.

The same applies when telling people they are being made redundant. Workers tend to resent preambles about '*a chance to explore new opportunities'.* Most soon-to-be ex-employees find such platitudes meaningless and patronising. The more the axeman talks, the less likely it is the employee will be to understand and accept the finality of their situation.

But when it comes to receiving negative information about imminent danger – for example '*I think your boyfriend has put something in your drink'* people need the information immediately. They don't need a buffer to process bare facts, especially when they might protect them from harm. If there's a fire, people need the information quickly so they can get out without delay.

Believe it or not, the same directness applies when telling someone they have a terminal disease. Patients don't like it when doctors try to talk around it.

145 participants took part in the study, and each received a range of bad-news scenarios. They were given two types of delivery for each and for each received message, and they ranked how clear, considerate, direct, efficient, honest, specific and reasonable they perceived it to be. They also ranked which of those characteristics they valued most.

For the most part, participants valued clarity and directness. But those giving the news felt more comfortable if they padded it out. This explains why when we deliver bad news, we often buffer it with small talk.

However, there are cases when buffering can be valuable, such as when trying to make a persuasive case to change others' firmly held beliefs or opinions and where a strategic build-up is also part of the argument.

For most people, personal beliefs are a sensitive minefield. Any message that challenges that belief system needs a certain amount of buffering otherwise they will turn away.

So tell 'em straight… with just a little sugar coating.

That is probably the best way after all.

Never admit to anything – especially if you're tired!

Tiredness can affect our judgement… and land us in jail!

English law is very different than American law. In the United States a confession is enough for a conviction, but in the United Kingdom, any confession must be corroborated by hard evidence. That's why, in the United States, the land of the free, a staggering 25% of wrongful convictions are said to have been made because of false confessions.

In the US, investigators have been known to deprive suspects of sleep while they carry out their investigations, unlike in the UK, where such practices are illegal under the Police And Criminal Evidence Act (PACE.)

Now, a study carried out at the University of California, Irvine, by one of the world's most highly respected psychologists, Professor Elizabeth Loftus, has found a link between tiredness and false confessions.

The researchers found that people are more likely to own up to something they didn't do if they've been deprived of sleep than those who are fully rested. This has obvious parallels with fringe religions like the Moonies, who use sleep deprivation as a tool to convert prospective recruits and divest them of their life savings and sometimes even their wives and daughters.

Elizabeth Loftus' study examined whether the likelihood of a false confession is increased by sleep deprivation, because sleep deprivation is thought to interfere with the ability to anticipate the consequences of one's actions.

A group of 88 undergraduates were recruited and over two sessions held a week apart, they were asked to complete a series of simple tasks on a computer. They were repeatedly given warnings against pressing the 'ESCAPE' key because pressing that key would result in the loss of data.

On the night of the second session, half the group were allowed to sleep for eight hours while the other half of the group stayed awake all night. In the morning, all the volunteers were asked to sign a statement falsely alleging they had pressed the 'escape' key during the first session.

After a single request, the statement was signed by 18% of the students who had had a proper night's sleep. Of the students who had had no sleep, a staggering 50% signed the statement.

Regardless of the experimental conditions, the odds of confessing were four and a half times greater for participants who reported high levels of tiredness relative to participants who reported low to medium levels of tiredness.

Elizabeth Loftus and her team believe that sleep deprivation increases the odds of obtaining a false confession because it impairs complex decision making abilities, specifically, the ability to anticipate risks and consequences. It also inhibits behavioural impulses.

According to Professor Loftus, the findings suggest sleep deprivation may compromise the reliability of evidence obtained during interrogations and could put innocent individuals at risk of wrongful conviction.

The research team have recommended that interrogators assess suspect's sleep patterns for the days preceding the interrogation and measure suspect's levels of tiredness before beginning any interrogation, but here is an obvious problem with that recommendation in that suspects may claim to be tired in order to delay the inevitable questioning. This could give a guilty party the time and opportunity to finesse their defence.

In addition lengthy detention while sleep patterns are monitored may act as a warning to possible accomplices that they may be being implicated.

In the UK suspects must be charged within 48 hours or released, unless their further detention is authorised by a magistrate.

A false admission of wrongdoing would have disastrous consequences for the innocent, and especially in a [US] legal system already subject to too many miscarriages of justice.

Professor Loftus is world renowned for her work on false memory.

Revenge is sweet after all

Revenge really does make us feel better. Social rejection incites us to seek to repair our mood by any means possible, and that includes causing harm to others. This is why…

A study carried out by researchers at the University of Kentucky, led by psychologists David Chester and C. Nathan DeWall, has confirmed that we really do feel measurably happier if we retaliate against those who hurt us. They discovered that people actually seek out opportunities to perform acts of vengeance specifically to make themselves feel better.

In a novel experiment, the researchers asked 156 volunteers to write essays focusing on a personal topic. The next step was to then let other participants read them and provide feedback.

But with one group, one of the researchers pretended to be a participant and gave everyone disproportionate negative feedback such as 'this is one of the worst essays I have ever read'. The team measured the participant's mood both before they sat down to write their essays and again after they were given the chance to express their disappointment and anger over the negative review.

The participants were allowed to express their frustration and aggression by sticking pins in a voodoo doll while imagining it was the person who had criticised their essay.

Not only did sticking pins in the dolls improve the mood of the dejected participants, the researchers also noticed their mood became indistinguishable from volunteers who received positive feedback.

To understand the motives behind aggressive behaviour, the researchers conducted a second study with another group of 154 participants.

In this test, subjects were given a pill they were told would enhance their thinking for upcoming tests in the study – in reality, a placebo. Some of the participants were told that the pill came with a side effect – their mood would become fixed and unchanging.

All the subjects were then asked to play a computer game with two other players where they batted a ball around. A third of the players were purposely given the cold shoulder by the other players. When the game was over, the participants were questioned as to how

rejected they felt before being given the opportunity to take revenge on those who had ignored them during the game.

The second game let the players punish the losers with a blast of noise through their headphones. Participants who had been treated unfairly in the first game chose to inflict more frequent and louder blasts of noise on the opponent who had rejected them earlier.

The revealing part of the experiment was that this did not happen with the volunteers who had been told the pill they took would steady their mood. The researchers reminded these participants during the break in the game that the pill was fully active and their mood would remain stable for at least an hour. Those participants kept the sound blasts to a minimum.

Although they had felt rejected by the other participants, they believed the pill would prevent any change in their mood and so they didn't take any opportunity to seek revenge.

The results of the study suggest that even though aggressive actions may *seem* pointless, they can have a purpose and deliver an outcome, if an unexpected one. Perhaps not as satisfying as removing someone's testes with a rusty knife perhaps, but possibly a step in the right direction.

How TV & film boosts our emotional intelligence

Watching TV dramas can boost your emotional intelligence!

Researchers from the University of Oklahoma discovered that watching well-made and well-written high quality fictional shows like Mad Men or Boston Legal can improve our ability to read other's emotions. In these days of diminishing human interaction, this has to be good news.

TV dramas exercise our minds because, to understand the plot, the audience must keep track of the mental states, emotions, relationships and intentions of the characters. So just like reading a good book!

A study published in 2013 in the Journal *Science*, also found that reading quality fiction, such as the works of Charles Dickens, also boosts emotional intelligence.

One half of a group of volunteers watched either Mad Men – a fictional series about the advertising industry in 1960s America, or The West Wing – a fictional series about U.S. politics. The researchers chose those particular dramas because they had both been nominated for, or had won Emmy Awards, in *'recognition of the quality and complexity of their narratives'.*

The other half of the group watched either a Discovery Channel documentary about sharks or a Science Channel documentary about the Sun.

The participants were then given a Theory of Mind test, which measures a person's awareness of, and ability to interpret, the mental states and emotions of others. This involved looking at images of eyes and matching them with the correct emotion the person was experiencing, such as pleasure, envy or panic.

Those who watched the dramas performed significantly better than those who watched the documentaries. Without knowing what the people in a story are thinking, it's difficult, if not impossible, to follow the plot.

Although documentary-style TV may require the audience to follow the narrator's train of thought and reasoning, these are more usually spelled out when the purpose of the presentation is to inform. With fiction, on the other hand, part of the pleasure is derived from guessing and second-guessing the intentions of the protagonists.

A second experiment was carried out with another group of volunteers, and again they watched either a drama or a documentary. A control group watched no TV at all.

Again, viewers of the dramas scored higher than those who watched the documentaries. Not only that, but the viewers of the documentaries failed to score significantly higher than those in the control group.

So… well-written and intelligent drama wins the day. But it still doesn't exercise the imagination in the same way a well-written book can – with the book, everything is left to the imagination and that stimulates not just our emotional intelligence, but our creativity too.

Researchers at Ohio State University made two lists of films made after 1985 with high viewer ratings. One list was made up of meaningful movies and the other was made up of less meaningful movies. 1,098 volunteers – randomly selected men and women from a wide social spectrum – watched either the meaningful or less meaningful movies before filling in a questionnaire on their thoughts and reaction to the films.

Among the movies on the meaningful list was Stephen Spielberg's Schindler's List, which follows the story of Oskar Schindler, a German industrialist who saved over 1,000 mostly Polish-Jewish refugees from the Holocaust, Hotel Rwanda, The Shawshank Redemption, Slumdog Millionaire and Up.

The key elements of these films were:

- Their poignancy, the mixture of happiness and sadness
- Their emotional range
- Their ability to make people feel elevated and inspired by watching them

The researchers asked participants to select up to three values from a list of 16 that they had seen represented in the film they were asked to recall. The list of values included things like 'achievement and personal success', 'love and intimacy' and 'courage and bravery'. Participants then rated the personal importance of each value.

The researchers found that when people recalled watching the meaningful films, they reported a variety of positive reactions such as being better able to accept the human condition and make sense of problems in life.

For example, some films helped them *'feel like struggles in life are for a reason… both happy and sad experiences give meaning to our life… gains and losses are part of life'* and *'more easily handle difficult situations with grace and courage'*.

This could explain why people turn to movies that make them both sad and happy and explore difficult subjects they may not always find uplifting.

Those positive experiences were less likely to be reported when people thought about less meaningful movies like Ratatouille, Fight Club, Pulp Fiction, The Big Lebowski or Catch Me if You Can. But that doesn't mean people can't find meaning in films that are meant to be more entertaining than meaningful.

Watching meaningful movies such as Pixar's Up or Slumdog Millionaire can also help us feel more prepared to deal with life's challenges and want to be a better person. Watching meaningful films – especially those that were moving or poignant – really can make us feel more prepared to deal with life's challenges.

So it appears that watching meaningful movies actually help people cope with difficulties in their own lives, and might even help them want to pursue more significant goals.

Participants recalling the meaningful films were also more likely to say the movie motivated them to be a better person. They were also left wanting to do good things for other people and seek what really matters in life.

Most people felt better able to make sense of difficulties in their own life when they recalled a movie that focused on values that were important to them.

Importantly, the findings recognise that people see films as more than just entertainment.

He added that 'some films may help people cope and grow through difficult periods in their life'.

The research was published in the journal *Mass Communication and Society.*

The truth about multitasking… it's bad for you

Being able to juggle multiple tasks at the same time might sound like a great time-saving idea, but it's not! Multitasking confuses the brain and leads to more stress and mistakes.

Multitasking is an illusion. The brain's natural limitations mean it can only process a limited amount of information at one time. This is because attention is a limited resource and our brains have limited capacity. Don't believe me? Try writing a letter and watching TV at the same time. It can be done, but it can't be done *well* because neither will command your full attention. So, it *can't* be done effectively.

Ever found yourself turning the radio down in the car when you're trying to find somewhere? People who *think* they can multitask are actually less efficient at filtering out distractions. Of course women often claim they can multitask, juggling two or more activities at the same time, but the bad news is that they are fooling themselves.

Multitasking can ruin productivity, disrupt creative thoughts and increase the chances of making more mistakes than you would if you were able to just focus your attention on one thing at a time.

The brain works more efficiently when it's allowed to focus. That means making time to do important things, eliminating distractions, and turning off your smartphone! Even taking a short break can refresh the brain and a minute of exercise (a quick walk around the garden is good) can increase blood flow to the brain, helping you to think more clearly.

The way the brain perceives information about the world is the result of millions of calculations carried out simultaneously in the most complex structure in the known universe.

Imagine your consciousness laid out on a giant cinema screen with lots of different thoughts all competing for attention. Your sense of sight provides the main sensory input for lots of vital information that is then processed by your brain. Your eyes dart about making small movements called saccades as they scan visual information, with a small patch of sharp focus in the centre.

When the information is processed in the visual cortex, the sharp focus images are knitted together, and the brain fills in any gaps and creates a seamless stream.

But when we try to manage more than one task at a time the brain has to make a series of shifts. This happens even though we might feel our thought processes are seamless.

Even something seemingly straightforward, such as stopping work to take a phone call can derail the existing process, even though the interruption may only be for a few moments. The brain has to stop focusing on working, switch to listening, and then back to working. But when the brain returns to the first task, it needs more energy to get back into the flow. This increases the chances of making mistakes.

Likewise, the effect of background noise, especially meaningful conversation in the office or on the radio, can be distracting and affect concentration.

But why are our brains drawn to a habit which has such negative effects on productivity?

One reason may be because of how our brains evolved. At some point in the past, being able to pick up a new sight or sound may have helped us to recognise and avoid danger, thus offering an evolutionary advantage and saving our ancestor's lives. But this same adaptation could have the opposite effect today.

In today's modern society our lives are rarely in danger, but the ceaseless onslaught of information has the potential to trip us up. Our brains are simply not equipped to handle sensory overload.

Some experts, including Earl Miller, a neuroscientist at the Massachusetts Institute of Technology (MIT) have suggested that completing small tasks, such as replying to an email, are easy 'wins' that give a small sense of accomplishment, and these pleasant feelings can become addictive. This makes perfect sense – many people get a sense of satisfaction when they accomplish small tasks.

A study at the University of Cambridge published in 2011 highlighted behavioural comparisons in rats. When the animals were trained to push a lever a set number of times to receive food, they got food when they were hungry and spent the rest of the time grooming, foraging and exploring their enclosure.

But when the rules were changed and they realised that they had to press the lever a random number of times – such as twice the first time and 12 times the next time – the animals switched to being consumed by the quest for food. Scientists believe an element of this may be present when people scan their emails.

It may be difficult to persuade people to give up multitasking because it has always been thought to lead to better productivity, but we now know the opposite is true. The trick is to remove the temptation to engage in more than one task at a time. That might be the only way to overcome the brain's unwavering thirst for new information.

Now for the very bad news… multitasking can cause untold damage to your mental health and wellbeing. Seriously! Before you dismiss this, you should read on…

Research carried out at the University of London shows that multitasking can actually lower your IQ. This may be hard to believe as one would think multitasking would exercise and therefore improve intelligence.

However… participants who multitasked during experimental cognitive tasks experienced declines in their IQ scores that were similar to those experienced after smoking marijuana or staying up all night. IQ test reductions of around 15 points for multitasking men lowered their scores to those of an average 8-year-old.

Worse, it has long been believed that any cognitive impairment from multitasking was temporary, but the latest research suggests otherwise.

Researchers at the University of Sussex, UK compared the amount of time people spent on multiple devices – such as texting while watching TV – with MRI scans of their brains. They found people that multitasked a lot had less brain density in the anterior cingulate cortex, a region responsible for empathy as well as cognitive and emotional control.

More research is needed to determine if multitasking really is physically damaging the brain (as opposed to existing brain damage that predisposes people to multitask) but it's clear that multitasking has negative effects.

The way we are interacting with the devices might be changing the way we think and these changes might be occurring at the level of physical brain structure.

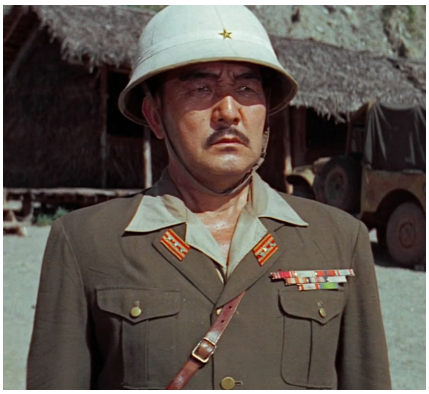
Finally, although it is generally accepted that fiddling with your phone or tablet while in conversation is rude, although it seems to be more acceptable amongst teenagers and younger adults because it's becoming a social-cultural behavioural norm, psychologists believe that multitasking in meetings and other social settings are indicators of low self-esteem and social awareness – two emotional intelligence (EQ) skills that are critical to success at work.

I'm not so sure about low self-esteem, but poor awareness of traditional social norms would be spot on.

90% of top performers have high EQ's, but if multitasking does indeed damage the anterior cingulate cortex – a key brain region for EQ – as current research suggests, it will lower your EQ at the same time it's alienating your colleagues. Oh dear… You're fired.

Be happy in your work…

Workaholics are happy people after all…



The term *workaholic* was first used by psychologists in the 1950's when they tried to discover why although addiction to work appeared to be the same as an addiction to gambling, workaholics who loved their jobs didn't suffer the same kind of negative health problems from working every hour God sends.

However, a study carried out by researchers at Vancouver's Simon Fraser University's Beedie School of Business, the University of Pennsylvania and the University of North Carolina, Charlotte, has raised questions over research that warns hard workers may be suffering from ADHD, have a high risk of depression, or suffer heart problems as a result of lack of sleep.

The new study reveals there's a big difference between workers who have an impulse to overwork and those who have an inability to detach themselves after-hours. Some workers become totally absorbed in the challenges their job presents. This is different from those who suffer from say, anxiety about their job, or obsessive ambition.

The three universities examined responses to a questionnaire from 1,277 workers at a large international financial consulting firm and medical screening results from 763 of that group. The surveys provided data on the employee's work hours, as well as their responses about their level of workaholism, their engagement in their work, and their sense of health and wellbeing. The medical screenings looked for risk factors for heart disease and diabetes.

The results showed that working long hours in itself was not an indicator that someone would suffer stress-related physical symptoms (such as headaches) or the risk factors for heart disease and diabetes. Evidence that these would lead to heart disease or diabetes was found only for employees with below-average work engagement. Workaholics with above-average engagement showed no sign of being at risk for these serious health disorders. Indeed, their risk factors were lower than those of non-workaholics, suggesting a surprising health benefit of working compulsively at something they loved.

The moral of the story…? Your health will not be affected if you work hard at a job you love, get satisfaction from, and enjoy. Of course we always suspected this was the case, but now the scientists have proved what deep down we all knew to be the truth in the first place.

Get a life! – the downside of celebrity worship

One in ten people are obsessed with a celebrity – so much so that their obsession affects their daily lives. Celebrity Worship is now recognised as a psychological disorder. An estimated 1% of people have it so badly they can be classed as borderline mentally ill.

It's natural for people to admire others who are successful, who are the centre of attention, or because they are athletic or good-looking. Celebrity worship is a hangover from our evolutionary past. Thousands of years ago, our ancestors looked up to the best hunters or the oldest and wisest.

But we no longer need to hunt, and a long healthy life is now the norm rather than the exception, so the fittest have been replaced by the famous as objects of our esteem. We try to emulate our modern day heroes because deep down, we also want to be successful, admired… and wealthy.

In a world now dominated by TV, the Internet, and social media, there has been an almost catastrophic decline in family and community relationships. Celebrities have become a substitute for real family members, friends and neighbours.

There was a time when everyone in a street knew everyone else, but we are now much less likely to even know the names of the people who live nearby. Living in City Centre Manchester in the 1980's, I had no idea who my neighbours were – apart from occasionally grunting at them in the lift, I rarely saw a single one. In the 21st century, respect for, and interest in our fellow human beings has been substituted by an unhealthy fascination with the famous.

However, any 'relationship' with a celebrity is by its very nature, purely imaginary – we involve ourselves in a completely one-sided relationship with someone who is unaware of our existence, and even if they were, it is unlikely they would want to know us. This 'intimacy at a distance' is not only unrewarding, it can be destructive.

One problem is that we are not very selective or discerning in our choice of role models. Celebrity worship is now based on illusion rather than achievement. Today's objects of worship are not necessarily good role models. Stardom being what it is, many of them, with their addictions and their personal and public failures are very bad role models. Yet even the knowledge of this information does not put us off…

Psychologists believe that imagined connections with celebrities are formed because individuals feel they ‘know’ the celebrity – they can directly observe the way they portray themselves and the way they are portrayed in the media.

The truth is that celebrities’ real personas are usually very different from the characters they portray or pretend to be, or the way they are reported in the press, and particularly in the tabloids. Stories are usually regurgitated word for word from press releases sent out by agents and PR companies. These unrequited relationships, where one person expends emotional energy, interest and time, in reality is intimacy unsatisfied.

Individuals may think they know and understand the celebrity's real personality in the same way they know and understand the personalities of their friends. A characteristic of mass media – radio, television, movies and Internet – is the *illusion* of a face-to-face relationship. Easy access to information about celebrities’ personal lives on line and in glossy magazines compounds this illusion.

When live theatre was the main source of entertainment any ‘confusion of identity’ was temporary. As soon as actors took their final bows and the curtain fell, their fans quickly returned to the real world, although there were occasional exceptions. Actors had affairs with admirers, but this behaviour was not the same as today’s celebrity worship because real intimacy was involved. It was the advent of radio and television that supplied a ‘continuous interplay’.

For a lot of fans, it is difficult to understand or accept that actors or rock stars or social media ‘influencers’ are not the characters they think they are, and neither are they the same personae their agents and public relations people feed to the media – they are very different.

It is the *pretend* character that people form a bond with, hence the huge influence of celebrity on fashion and behaviour! According to writer and critic Clive James, *‘The famous help us live. What they do, they do for us. Fame is what we do for them. We turn them into characters and put them in a show, a modern version of a passion play. The ones we respect burn like angels…’*

The celebrity’s false persona does however offer fans a continued relationship, because their appearance is a regular and dependable event, something that can be relied on, planned for, and integrated into the routines of daily life. But again, this is still an illusion. When someone’s favourite TV show is cancelled, fans are known to experience feelings similar to those of losing a real friend.

Even when viewers know their favourite TV character is going to be written out, they anticipate negative feelings and emotions similar to those experienced over the dissolution of a real relationship.

A recent study by Dr. John Maltby of 3,000 people and published in the *Journal of Nervous and Mental Disease,* discovered – perhaps unsurprisingly – there are different levels of celebrity worship.

In teenage girls between the ages of 14 and 16, the relationship was more likely to be one of intense worship. Teenage girls engaged in celebrity worship had a poorer self-body image compared to other groups. The most celebrity obsessed among them also suffered from higher levels of separation and were also more prone to fantasy.

Those mildly afflicted by the need to worship celebrities are likely to be extroverts who have a wide social circle, but their affliction is restricted to a habit of talking about the

object of their passion, often to the irritation of their friends. They appreciate the entertainment/social dimension of the celebrity, in particular, their chosen celebrity's ability to entertain and hold the attention of others.

This ability is obviously attractive to extroverts who would wish to emulate them. These subjects accounted for about 14% of the study group. They were generally happy, outgoing and optimistic people.

Conversely, 10% of those who took part in the study displayed the tell tale signs of the second kind of celebrity worship – an imagined, intense and compulsive relationship with their idol.

This group had real feelings for their chosen celebrity – they were likely to be upset if the celebrity got into trouble or suffered some kind of personal trauma. They were more likely to be neurotic, tense, moody and emotional as well as more prone to anxiety, depression, stress, and poor body image.

The third kind of celebrity worship sufferers – the 1% – turned out to be solitary, impulsive, anti-social and troublesome, with unusually high levels of insensitivity. These individuals believed they had a very special and personal bond with their chosen celebrity – they believed the celebrity actually knew them and they harboured fantasies about their idol.

They were prepared to do anything to get their attention, even performing acts self harm or harm to others. John Hinckley's attempted assassination of President Ronald Reagan on March 30, 1981 in an attempt to impress the object of his desire, actress Jodie Foster, is but an extreme example.

Members of this third and extreme group harboured an almost overwhelming compulsion to be near their idol, which unchecked could lead to uncontrollable and unreasonable behaviours.

Members of this group are known to have become stalkers, even going so far as to break into celebrity's homes. They end up with restraining orders or have even been sent to prison. Celebrities stalked by fans include Sandra Bullock, Paris Hilton, and Katie Holmes, although in Miss Holmes' case, they were probably Scientologists.

I have been stalked by an obsessed fan. I was forced to block them on social media and eventually had to resort to hiring a private investigator, involving the police, and engaging lawyers. The person concerned was handed a restraining order against them which prevents them from coming within 100 metres of me, which in effect excludes them from the theatres I perform in, certain restaurants I frequent, and most important, my home. They are not to contact members of my family or my friends or publish comments about me in print or on social media or on the internet. Their employer was informed and they lost their job.

It was not the sort of experience I would recommend. Nor was I the sort of person this nut job imagined me to be.

No sex please, we're British

Society's modern obsession with sex is not representative of reality. A sizeable minority of perfectly normal, well-adjusted and happy people are not particularly interested in having intercourse every time the opportunity presents itself.

Sex, sex, sex… will they ever stop going on about it?! Society is obsessed with sex… Sex is overrated, over-exposed, over talked-about and overdone. Personally I'd rather have a pizza… and so would a lot of people. The theory that we should want more exciting, more adventurous sex is a recent one – and wrong.

There are lots of people who don't feel the need for sex and are rarely, if ever, aroused. They can go for days, weeks, months or even years without sex and not even miss it. When I realised I didn't actually *have* to have sex, it was as if I had rid myself of an irrelevant and mischievous monkey. I woke up one day, realised it wasn't anywhere near as great as it was cracked up to be, and my life would be just as happy without it. And I'd have more time for the more important things in life.

A lot of people are already keenly aware that sleep is better than sex – such as parents with children and divorce lawyers. For most people, the importance of sex diminishes with age, though it may occasionally reappear briefly if a new relationship is on the cards, or after the consumption of copious amounts of alcohol when, beer goggles on, even that woman from the pub… well you get the idea.

But sex sells! It's there every time you open a newspaper, it pouts at you from the pages of glossy magazines and it's shoved in your face every time a celebrity tart thinks up a new place to be caught doing it in. Having public sex has become the shortcut of choice for those wishing to embark on a career of vacuous celebrity.

The sex industry is worth billions. Just talking about things that five decades ago would have resulted in criminal prosecution (think OZ magazine and Lady Chatterley's Lover) are now a part of normal daytime TV viewing. Sex, sex, sex… it's all they talk about. From *This Morning*, to *Loose Women* – it's three hours of how to do it, how to do it better, who's doing it, who they're doing it with, who's not doing it anymore, and who should be doing it. Enough already!

That constant message, combined with the social stricture of monogamous marriage means that people might feel they are obliged to service the sexual needs of their partner,

or someone else's partner, at which point sex becomes a duty, and there must be something wrong with you if you aren't doing it at every opportunity!

Up to the 1950's, lots of people never had sex. Sexual abstinence was regarded as normal. On the other hand, sex outside marriage, masturbation and homosexuality were all very much taboo, although perhaps unsurprisingly, prostitution was far more prevalent.

In these more liberal and supposedly enlightened times, sexually transmitted diseases are on the increase, and shockingly, mostly amongst older people as the grey liberation movement seeks out once verboten pleasures via the Internet to satisfy their hitherto dormant libidinous desires. Briefly, sex was something that was either reserved for the marriage bed (as pleasure or duty) or not done at all except by libertines, reprobates and the French. The idea that everyone should have and enjoy sex, and continue doing so into wrinkly old age, is almost entirely a product of the modern age.

However, there are also some exceptions to the modern sexual de rigueur. Some people may not be interested within a relationship, but still masturbate – others are interested in kinky sex, which also satisfies the desire for dominance. One famous hypnotist of my acquaintance has, according to the Daily Mail, a keen interest in having sex with a succession of prostitutes who provide instant, uncomplicated and emotion-free gratification… allegedly.

Sexual perversion and the unhealthy fascination with the pursuit of extremes are addictive. As with drug addiction, devotees of bizarre sexual entertainment will seek out ever more risky specialities to achieve the same level of satisfaction. The above-mentioned hypnotist once confided in me that he enjoyed being urinated on by young girls and had even paid for the privilege. Shame, I would have done it for nothing.

Those who indulge in particularly perverse practices have personality traits that may put them on the autism spectrum, such as lacking emotional interest in their sexual partners. They may also tick some of the boxes for psychopathy, such as a need for dominance, targeted venom and a desire to impress their mother. One could be forgiven for thinking Freud may have been right after all.

On the other hand, some people are simply oblivious to sexual drive (think Cliff Richard) although they may enjoy genuine close and even romantic relationships.

But how can we measure this? People are notoriously unforthcoming when questioned about their sexual habits. Some may even deliberately give misleading answers to questionnaires just to save face.

Somehow, the questions themselves intimate that expectation that not feeling like having sex is a failing, particularly in males, and especially if it's followed by other questions about things that might sound like problems, such as frequency of intercourse or trouble maintaining an erection.

People who suspect they might be confronted with questions about their sexuality and feel uncomfortable answering them might refuse to take part in such surveys. People who refuse to participate in sex surveys are quite different from those who do take part. Those who refuse to take part are likely to be less sexually liberal in their attitudes and also younger. 99% of people over 30 say they have had intercourse. This number seems suspiciously high taking into consideration the preponderance of lifelong singles, which by default would include some disabled people, nuns and priests. Priests?! Oh yeah… priests.

There are two problems with the way we have been encouraged to think about sex:

First, and most worrying, is the exposure children have to sex, something undreamt of 30 years ago and now almost compulsory because of easy access to the Internet and the sexualisation of women like grubby no-discernible-talent media-whore-trollop Kim Kardashian. Second, is the myth that failure to achieve partnered status makes you a loner and therefore a bit strange.

It's unfair that people not interested in sex are often considered abnormal just because everyone else thinks they should be.

Why can't people just read a book?

Your achy-breaky heart

Behavioural and cognitive strategies can reignite a failing relationship and ease a broken heart.

By using your head instead of your heart you can control how much you love someone – simply by focussing positive or negative thoughts about them.

According to researchers at the University of Missouri-St. Louis and Erasmus University, Rotterdam, there are two types of love – infatuation and attachment.

Infatuation is something most of us have experienced at some time or another, usually in our youth. It can be overwhelming and is oft confused with ‘romantic love’ or ‘passionate love'. Attachment, on the other hand, provides us with the comforting feeling of emotional bonding, and is closely related to intimacy, commitment and companionate love.

This study is the first of its kind and was conducted in two parts. The first part involved a questionnaire while the second involved another questionnaire and a visual task.

For the first part, the researchers asked 27 participants 17 questions on a *totally agree/ totally disagree* basis about their feelings of love and romantic relationships, designed to assess the person’s perceived control of their feelings. The questions included such things as:

- Love is uncontrollable
- I had control over whether I fell in love with (name)
- Love is involuntary’

The questions were couched in such a way as to measure the participants perceived control over love in general, and over infatuation and attachment specifically. They were also phrased in a way that would measure perceived control over one’s own – as opposed to other people’s – feelings of love, the intensity of love and over the object of their love.

Following the questions, the researchers discovered that a majority of the participants believed they were more in control of feelings when they felt attached to their partner rather than when they felt feelings of infatuation.

I'm presuming that the results took into consideration the way in which most people unconsciously tweak their responses in an attempt to present themselves as moral and intelligent level headed human beings.

Nonetheless, the results of this first and purely exploratory study show that people perceive feelings of love as controllable, somewhat uncontrollable or completely uncontrollable.

Some participants did perceive more control over some aspects of love than others and the majority of people noted that they have used numerous techniques when struggling with a broken heart or while they were in a long-term relationship.

Some strategies seemed specific for changing the intensity of feelings of love, rather than for regulating emotions or maintaining relationships.

For the next part of the study, the team recruited a new group of 40 participants, half of whom were in romantic relationships, and half had recently separated from their partner.

This group also completed the 17 questions, but this time they were each given 30 digital pictures of their partner. Whilst looking at the pictures, the volunteers were asked to think of both positive and negative aspects of their partner and their relationship. They were also asked to think up imaginary future scenarios.

Whilst completing the task, each participant's EEG was recorded while they viewed a slideshow of the images and positive or negative comments relating to their partners.

The researchers found that after looking at nice images and positive comments, participants felt more love for their partner, but less love after viewing negative images and comments.

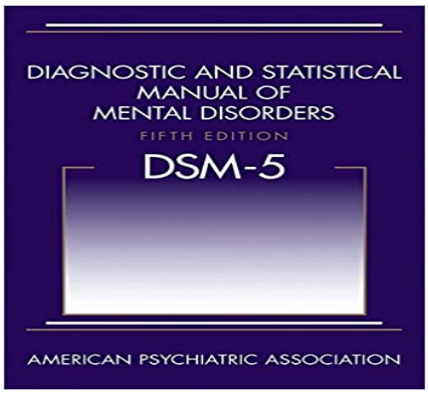
A common trick used in hypnotherapy is to ask clients if there was ever a time in the relationship when they didn't like their partner so much – maybe it was when he/she burped after a meal, or when they put on weight, or got drunk and called your mother pig.

Focussing on these less enjoyable moments in a relationship encourages the client, at an unconscious level, to like less the idea of being in a relationship with that person. A rare example of the mainstream scientists catching up with the fringe if ever there was one!

The full study was published in the journal *PLOS One.*

The Diagnostic and Statistical Manual

Many major diagnoses from the American Psychiatric Association's Diagnostic and Statistical Manual – the famed 'psychiatrist's Bible' – don't really mean anything useful.



The DSM-5, or Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, contains a list nearly 300 disorders, such as depression, anxiety and schizophrenia.

But in recent years, its contents have attracted a degree of criticism, and some say that its diagnoses are unhelpful.

A study conducted by experts at the University of Liverpool suggests that the criteria for each diagnosis are too similar, too impersonal, and ignore the role of trauma and negative experiences, rending it a 'disingenuous categorical system'.

According to virtually every public health measure in the US, people are more stressed, anxious, depressed and generally in worse mental health than ever before. Incidences of mental illness that some call 'an epidemic' have left hardly anyone in the US untouched. Yes, we know Americans are crazy, but they're not *all* mentally ill. Even so, the number of common but sometimes crippling disorders are up among men, women and children of every race, age and income level across the country.

The University of Liverpool researchers had their doubts about what those diagnoses mean and how they are measured.

They analysed the big five chapters of the DSM-5 – those that describe schizophrenia, depression, anxiety, bipolar disorders and stress, and trauma-related disorders. The team assessed how the different diagnoses actually differed but found that there really isn't much contrast between one diagnosis and another because the same or similar experiences occur in multiple diagnostic categories such as depressive disorder, bipolar and related disorders, and can be included within the criteria for schizoaffective disorder.

Various disorders were diagnosed according to 'decision-making' rules instead of symptoms. Where they would have expected consistency in the scientific method applied to diagnostics, there was no consistency at all.

The study authors acknowledged that, to some degree, diagnosing psychiatrists were allowed a degree of 'flexibility' in making individual assessments but it is difficult for a manual designed to categorise disorders.

Trauma and individual negative experiences are among factors psychiatrists might need to be flexible in considering, but the University of Liverpool researchers found that these were not, in fact, accounted for substantially in the DSM-5.

Even if the Diagnostic Manual could effectively help clinicians identify a disorder, it does not leave much room to consider the particulars of each patient, or describe the best course of treatment for a diagnosis for the specific patient.

So, they were essentially left with the same question the research attempted to address: what is the usefulness of the manual?

Although diagnostic labels create the illusion of an explanation, they are scientifically meaningless and can create stigma and prejudice.

Dr John Read, a professor of psychology at the University of East London says *'Perhaps it is time we stopped pretending that medical-sounding labels contribute anything to our understanding of the complex causes of human distress or of what kind of help we need when distressed'.*

The DSM has had a huge influence on a school of thinking that treats psychiatric distress as disease to be 'fixed' with pharmacology.

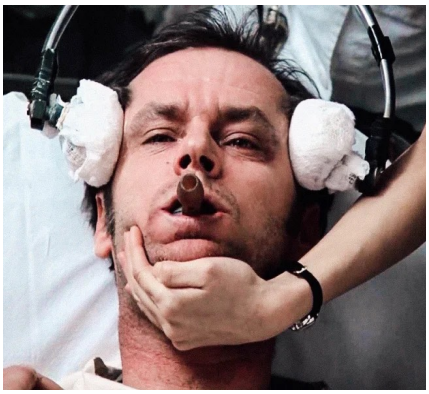
The study, published in *The Lancet*, suggests that these biomedical diagnoses are just obscuring and sterilising much more deep-rooted experiences and their resultant symptoms and problems for sufferers.

Over the five decades since its introduction, the DSM has grown in size from a mere 68 pages to now nearly 1,000 pages. The people it has benefited most are the big pharmaceutical companies whose salesmen set out with copies of the manual and a list of new drugs designed to combat almost every condition described in the manual – from ADHD to PTSD, from anxiety to depression.

But in recent years, there's been a reaction against these 'biomedical' definitions and more experts have advocated for less drug prescribing, and more psychotherapy.

Shocking! Electroconvulsive therapy

Electroconvulsive therapy (ECT), approved by the NHS to treat depression, is not safe and should be stopped.



In the late 18th century, Dr. Franz Mesmer experimented with Powerful magnets to cure hysteria, catatonia and other psychological illnesses. His work was investigated by a Royal Commission set up by King Louis XIVth and Mesmerism, as it had come to be known, was eventually consigned to the dustbin of history.

Electroconvulsive Therapy (ECT) is a treatment that involves sending a powerful electric current through the brain which triggers an epileptic seizure. The treatment is carried out under a general anaesthetic and also uses muscle relaxants, so that the muscles only twitch slightly, and your body does not convulse during the seizure.

Astonishingly, no-one really knows how ECT works, but it is known to change patterns of blood flow in the brain and the way energy is used in parts of the brain thought to be involved in depression. It may cause changes in brain chemistry, although how these are related to symptoms is not understood.

ECT is mainly used as a treatment for severe, life-threatening depression and for patients who have not responded to medication or talking treatments. It has been used for severe postnatal depression and for patients who experience manic or severe or long-lasting psychotic episodes.

ECT is also used for catatonic patients – that is, patients who stay frozen in one position for a long time or repeat the same movement over and over again for no obvious reason, or patients who are extremely restless. Some patients have found it helpful and have asked to receive it again.

The main side effects of ECT are memory loss – also common after epileptic seizures. Memory is usually short-term, but can be very significant, disabling and long-lasting in some people. This is often and understandably a cause of anxiety.

Some people have been so badly affected that they have lost key skills or knowledge, such as expertise needed to continue their professional work or career.

One such case was Sue Cunliffe, a successful paediatrician before she underwent ECT. She said she was told ECT was safe but suffered catastrophic brain injury, leaving her

unable to perform even basic tasks. Despite a diagnosis of ECT induced brain damage, psychiatrists rejected her complaint, thereby denying her adequate support

Professor John Read at the University of East London, who has published several reviews of the ECT research literature, is concerned about its dangers. He said there hasn't been evidence that the treatment works for over 30 years, and absolutely no evidence of long-term benefit!

Only five studies have recorded only a temporary lift in mood for only a third of patients, and some studies suggest that ECT causes long lasting or permanent memory damage, although other experts (reporting in the British Medical Journal) have argued that ECT is safe, and that the debate has been '*over for decades*'.

The fact is, no-one quite knows or understands how ECT works, but it is thought it might change the way brain cells interact in parts of the brain involved in depression. ECT is approved for the treatment of people with severe life-threatening depression, schizophrenia, mania, and is a last resort for some patients – including the late actress Carrie Fisher of Star Wars fame.

Since its first use in 1938 there have been only ten studies comparing ECT with placebo treatment for depression. Half the studies found no difference between the two treatments, and the other half found a temporary lift in mood – but only during treatment – and it not prevent suicide. No studies have been conducted since 1985.

Despite this astonishing lack of evidence, psychiatry remains adamant that ECT works. Professor Read has warned of the risk of memory loss '*similar to traumatic brain injury'.*

Personally, I think that the treatment is barbaric and patients subjected to it will feel worse.

Dr Sameer Jauhar at the Institute of Psychiatry, Psychology and Neuroscience at King's College London and Professor Declan McLoughlin at Trinity College Dublin, claim that:

'*The scientific debate about ECT has been over for decades. Systematic review and meta-analyses from the UK ECT Review Group concluded that it was more effective than placebo or antidepressants. ECT is still used 80 years on because evidence shows it is effective for treatment resistant depression, which is often severe and sometimes life threatening, as well as resistant mania and catatonia… ECT is cost effective and improves quality of life. In England 0.43 per 10 000 population are treated annually with ECT, and worldwide about a million people have ECT each year*'*.*

They acknowledge that ECT is associated with deficits in short term memory and brain function compared with short term memory performance before ECT, but claim this deficit this can be resolved. They also argue that no robust evidence shows ECT causes brain damage at cellular or macroscopic level, and that relapse rates after ECT are similar to those of patients who take antidepressants.

They also point out that media representations of ECT '*have been mostly negative and poorly informed'.* They claim that these characterisations '*perpetuate stigma around ECT and may contribute to denying some of our sickest patients one of the most effective treatments'.*

ECT is approved by the National Institute for Health and Care Excellence (NICE) and in international guidelines. A NICE spokesperson said 'The independent committee which produced our guidelines on depression noted the uncertainties and conflicting views on the use of electroconvulsive therapy. As such, it recommended that ECT be used only in

certain restricted circumstances. It also made a recommendation for further research on this point'.

The mental health charity MIND say that ECT has also been depicted in '*quite barbaric ways on film*' leading to a false impression of what it is like. The practice was immortalised in the 1975 film *One Flew Over The Cuckoo's Nest* and Clint Eastwood's 2008 film *Changeling*.

ECT is not used as much as it was in the 1950s to 1970s, when it was considered more of a punishment than treatment, and often given without consent.

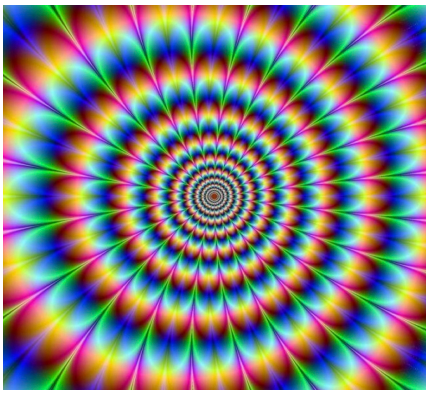
Current guidelines state that patients should be assessed for memory and thinking abilities both before and after each treatment. Patient's experience of ECT vary enormously, some finding it the most useful treatment they have had for depression. Others feel violated by it, and would do anything to avoid having it again.

Transcranial Magnetic Stimulation (TMS) is another physical treatment sometimes used as an alternative to ECT or antidepressants. It stimulates the brain using magnetic fields. NICE guidance says that there are no major safety concerns with TMS.

I wonder what Mesmer would have made of all this?!

Welcome to the sixties

LSD, or ‘Acid’ to give it its more popular name, is an unruly drug, and best avoided.



LSD, or Lysergic acid diethylamide to give it its proper chemical name, is an hallucinogenic drug, very popular in the psychedelic sixties and celebrated *Lucy in the Sky with Diamonds,* a popular Beatles song about the delights of ‘tripping'. But be warned – users can have ‘bad trips’ – especially if it’s contaminated or the user is suffering from depression.

Existing mood plays a big part in the course a trip takes. Colours will appear extremely rich and vivid and they can even take on meaning. Objects and faces can appear distorted, one moment they’re very close, the next moment, far away. Other people can suddenly appear strange, their faces changing shape in front of your very eyes – lights can seem attractive or menacing. The texture and taste of food can also suddenly change – that’s if you can stop it moving around on the plate.

Music not only sounds different, you start to hear it in a very different way and it can take on deeply philosophical meaning – it can be more emotional, or it can be terrifying. Trippers often turn up the volume to deafening levels to feel enveloped in it. Most interesting is that people who take LSD or consume magic mushrooms (psilocybin) often report that they experience great insights.

LSD also enhances emotions, so if you’re not in the right frame of mind, the effects, which can last 16 hours or more, can be upsetting or disturbing. In very rare instances, users have been known to leap off buildings in the mistaken belief they can fly, or because they suddenly feel the need to end it all. Some people suddenly decide to go swimming in the ocean so they can ‘become one with nature’. Sudden and extreme mood changes are also a risk. All in all, mind altering drugs are really quite dangerous.

Even just one trip can affect individuals for the rest of their lives. Long-term abuse has been linked to psychosis and severe depression. Where mental illness is already present, LSD can exacerbate problems as the brain’s critical faculties struggle to separate illusion from reality.

Some habitual users claim to experience occasional flashbacks so severe, it affects their ability to function normally. There have been reports of users experiencing psychosis-like episodes, especially in individuals who are vulnerable or suggestible and who regularly take LSD.

Nearly all users describe experiencing a perceived ‘higher state of consciousness’ where the mysteries of life, the universe and everything suddenly become crystal clear. Everyday objects or ideas can take on a new deep and meaningful significance. Thoughts wander off in unexpected directions. The higher the dose, the greater and potentially more catastrophic the effect.

Up to now, the acid trip has been a purely subjective experience – claims of ‘higher consciousness’ were regarded as a drug-fuelled urban myth by the mainstream scientific community during the 1960s, when LSD was popularised by Timothy Leary – famous for his 'turn on, tune in, drop out’ philosophy of life. Leary was an irresponsible college lecturer, named 'the most dangerous man in America‘ by President Richard Nixon.

The problem with LSD (and magic mushrooms) is that the thoughts and insights of genius experienced while tripping usually turn out to be nonsensical once the effect has worn off. Having observed small groups made up of three, four and five people, all high on LSD or mushrooms, I can state with absolute certainty that the ideas they think brilliant while tripping (I interviewed them and made notes both during and after) were as empty as the things they found hysterically funny… and which actually weren’t.

Fast-forward five decades and the first scientific evidence of the higher state of consciousness has been pinpointed by researchers at the Sackler Centre for Consciousness Science at Sussex University and the University of Auckland, New Zealand using fMRI scans.

There, neuroscientists observed unmistakable increased brain activity in people who had taken LSD and magic mushrooms. Sensibly, the scientists stress that the ‘higher state’ does not mean 'better' or more desirable.

They re-analysed data previously collected by Imperial College London and the University of Cardiff in which healthy volunteers were given one of three drugs known to induce a psychedelic state – LSD, psilocybin, and ketamine. Using brain-imaging technology they measured the magnetic fields in their brains and discovered that all three drugs increased levels of consciousness.

The scientists observed a sustained increase in neural signal diversity – a measurement of complexity of brain activity in people under the influence of psychedelic drugs, compared with their normal waking state. In other words, the tripping brain behaves very differently from the normal waking brain where electrical activity is less predictable and less integrated than during normal conscious wakefulness, proving that the ‘psychedelic brain’ state is distinctive.

Similar changes in signal diversity were found for all three drugs, despite their quite different pharmacology, but the results are nonetheless robust and repeatable. The study could help inform recent discussions regarding the carefully controlled medical use of such drugs, for example in treating severe depression.

In 2016, a previous study carried out by scientists at Imperial College London found that individuals who experienced drug-induced hallucinations ‘see’ with more than just the visual cortex, the part of the brain that processes information from our eyes.

It seems that when ‘tripping’ other parts of the brain also join the party. The barriers separating the different neural networks break down, thus functions such as vision, movement, hearing and memory conspire together to produce unusual effects. This probably explain the overall effect of the trip on the senses.

Messages to the visual cortex are processed via the parahippocampal gyrus. This area is associated with memory – the higher the dose, the more the parahippocampal gyrus communicates with the visual cortex, hence the complexity of the hallucinations.

The research team are now working to identify how specific changes in the brain's information flow affects aspects of the psychedelic experience, especially visual and audible hallucinations.

There are correlations between the intensity of the psychedelic experience and changes in signal diversity and this suggests that there are links not only to global brain changes induced by hallucinogenic drugs, but to those aspects of brain dynamics that underlie specific aspects of the conscious experience.

For more information, scientists should take a close look at what happens in Silicon Valley. The IT industry in Southern California has continued the tradition of psychedelic drug use as an aid to boosting creativity. A growing number of Silicon Valley professionals are taking micro-doses of drugs such as LSD, psilocybin and mescaline (from the Peyote cactus) every few days because they believe it improves creativity and focus. Both Steve Jobs and Bill Gates have admitted experimenting with LSD.

A micro-dose of LSD is usually around a tenth of a recreational dose – not potent enough to cause hallucinations, but still reported to heighten creativity, alertness, and energy.

Micro-doses are also said to engender feelings of wellbeing and with them, a reduction in stress and anxiety. Users also claim it improves quality of sleep and leads to healthier habits, although the only evidence for this is again, subjective or anecdotal.

There have been no scientific studies that prove micro-dosing actually does any of these things – but there should be.

How athletes practice self-hypnosis

Talking to yourself can improve athletic performance.

According to some new research, the old adage 'it's all a matter of perspective' could be especially useful to athletes looking to gain an advantage in endurance sports.

Sports psychologists have long known that ‘self-talk' can be useful for aiding enhanced performance but almost nothing was known about the way subtle grammatical differences – that is, using 'you' instead of 'I' can contribute to better performance.

Researchers from Bangor University, UK, say that motivational mantras uttered in the second-person perspective. The researchers chose cycling because comparatively little is known about the psychology of sports that require long periods of physical endurance.

They assessed the performance of 22 cyclists and found that athletes who uttered self-affirming phrases like '*you can do it*' as opposed to '*I can do it*' consistently completed the trial quicker and with more determination.

Cyclists who used the second-person perspective to motivate themselves performed better and generated more force yet reported feeling they had not exerted themselves any more than usual. In fact their performance generated significantly greater power output and faster time-trial performance.

There's currently no clear explanation for how or why the difference between perspectives can affect athletes performance, but researchers say it could be because using the pronoun 'you' helps to distance them from their own physical exertion. It could be that the use of the word 'you' may mimic the motivational speech of their coach.

The researchers say the study will help to illuminate best practices for coaches and athletes looking to push the boundaries in endurance sports.

The Bangor study was published in the *U.S. National Library of Medicine National Institutes of Health*.

The well of profundity runs dry

The whacky world of therapy is full of really useful stuff – stuff that can turn people's lives around. But hidden among the roses are the unmistakeable weeds of quackery and charlatanism.

Among the chief offenders is the well known and much fêted Deepak Chopra, a bullshit artist of note who once famously claimed to have caused an earthquake whilst meditating.

If you belief that, you'll believe anything, but his many followers consider him a genius – they fawn at the very mention of his name and clasp to their bosoms every pearl of wisdom that pours from his lips.

There are others like him and they are easy to spot if you look carefully. They are special beings that pretend to inhabit a higher plane of existence than the rest of us – their greatest pleasure is to enlighten and impress with their deep pseudo-spiritual platitudes and insight into how the universe really works. Their Facebook pages and Twitter feeds are littered with meaningless inane clichés that on first glance, seem profound but are ultimately worthless.

Here are some examples:

- Being rich is living life on your own terms – according to your possibilities, not your limitations.
- Happiness can be found, even in the darkest of times, if one only remembers to turn on the light.
- You must find the place inside yourself where nothing is impossible.
- When you make a choice, you change the future.
- Walk with those seeking truth... run from those who think they've found it.
- Even when you think you have your life all mapped out, things happen that shape your destiny in ways you might never have imagined.
- Happiness for a reason is just another form of misery because the reason can be taken away from us at any time.

If, like me these profundities are lost on you, then you are about to be vindicated because a new and *scientific* study carried out by *real* psychologists has found that people who are receptive to this new-agey inspirational gobbledygook also suffer from lower levels of intelligence.

They are also more prone to believing in the paranormal, fringe religions, conspiracy theories and the effectiveness of snake-oil based alternative medicines and therapies such as Neuro linguistic programming (NLP) and the like.

The study, carried out at the University of Waterloo, in Ontario, made use of quotes similar to the ones above, from the Twitter feed of the great and semi-divine guru Chopra. The psychologists tested whether some people were more receptive to the statements than others.

In four experiments involving more than 800 volunteers, the researchers asked participants to evaluate a series of statements and indicate how profound they thought they were and whether or not they agreed with them.

These were mixed with nonsense statements designed by the team that blended together buzzwords and meaningless or mundane statements such as '*attention and intention are the mechanics of Manifestation*' and '*imagination is inside exponential space time events'* – all of course nonsense, but impressive at first glance.

As part of the research, which primarily focussed on pseudo-profound statements or assertions that whilst presented as truth were in fact meaningless vacuous rubbish, the researchers also got the participants to perform a series of cognitive tests, asking them if they agreed with a series of statements about religion, the paranormal or conspiracy theories.

The results clearly supported the idea that some people are more receptive to this type of vacuous nonsense and that failure to detect it is a failure to recognise deceptive vagueness in false but impressive sounding claims.

Those who were more responsive to the vacuous statements were also less reflective and lower in cognitive ability, both in numeracy, verbal ability and fluid intelligence.

Deepak Chopra's quotes have become so famous that there are several websites dedicated to them and some even generate random quotes in his style by pulling words from his Twitter feed.

So here's one I borrowed from a long-running daytime American soap opera:

'Like Sands Through the Hourglass, So Are the Days of Our Lives.' Or maybe that could be *The Lays of Our Dives…'* just as meaningless, but funnier.

My New Year's resolution – and how I'm going to stick to It.

This year, I beat my own record! I kept my New Year's resolution for 10 weeks before I caved in and ate a whole large bar of Galaxy chocolate. Already I regret it.

The secret of my partial success was not to tell anyone what my New Year's Resolution was. I've realised (with a little help from my academic friends) that telling people is a mistake and I should have kept my mouth shut.

Researchers from five universities across the US – the University of California, Irvine, the University at Albany, the State University of New York, the University of Idaho, and Washington State University – have found that asking yourself questions about your addiction is a more effective way of sticking to your resolution. Instead of simply deciding to exercise as from January 1st, it might be more effective to ask yourself '*will I exercise this year?*'

Researchers have looked at the Question/Behaviour Effect. It's a technique whereby asking questions about a particular decision will influence future actions. Asking a simple question will prompt a psychological response which will influence subsequent behaviour. The same principle can be applied to other social behaviours such as exercising, dieting, or even prejudice. So, will I exercise this year? The most effective answer of course is 'yes' but it apparently works better if you don't provide a specific time frame for your goal.

The findings, discussed in the *Journal of Consumer Psychology*, suggest that this type of questioning can produce significant and consistent change. In fact the technique has been shown to influence behaviour more than six months after questioning it.

Merely questioning the behaviour increases the chance of it changing. If a person is asked 'will you diet?' they are reminded that dieting is beneficial to them, and that will make them feel bad about themselves if they don't do it – they will make an effort to do it in order to avoid any feelings of guilt.

The effect becomes strongest when questions are used to encourage behaviour with personal and socially accepted benefits, such as eating healthy foods or volunteering, although it can also be used effectively to influence consumer behaviour such as buying a new computer.

It's easy to ask yourself a question, and it can be done in a variety of ways, via emails,

advertisements or flyers, as well as everyday face-to-face human communication.

Marketers are already very excited about this research and some advertisers have already started to use the technique.

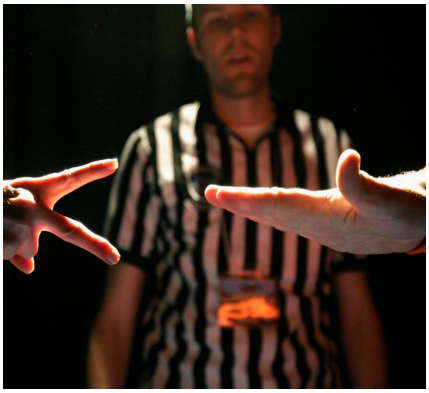
While the Question/Behaviour Effect was widely found to maintain influence over time, the researchers found that with habit-based behaviours, for example. drinking or smoking, the results were not so positive. In one study, people who were asked about their vices were found to have lapsed more.

Asking yourself a question on New Year's Eve could well lead to healthier decisions in the year ahead.

The good news is that since my earlier shameful behaviour, I am now back on the straight and narrow.

Rock, paper, scissors

It’s one of those games that can become addictive. Like gambling, it’s almost impossible to stop unless you’re ahead.



For most people, rock, paper, scissors was the first competitive game they ever played.

Rock, paper, scissors is a uniquely simple game, and with its high frequency of play, results come fast.

A lot of players think they have a winning strategy, something that will beat the competition. But players don't stick to their strategy because their emotions start to override any carefully thought out plan very soon after the start – usually within the first five or six moves.

Players fall into the trap of second-guessing their opponents instead of planning ahead their own moves. Moves quickly become irrational as their emotions start to affect their judgement and players rapidly resort to the tactic of returning to the same move that was, a very short time ago, a winner.

Rock, paper and scissors have equal status and therefore equal value, so one obvious method is to use each item an equal number of times. But players are too often tempted to repeat winning moves, and this can be a mistake. Sticking to a winning move doesn’t always work because the chances are your opponent will spot this weakness and exploit it. When this happens, it’s too late to change your mind.

Players also too often change their strategy after a loss, but then it’s also too late. Sticking to the winning strategy may be a double bluff and work after all. But both players will be searching for predictable patterns in the others’ play.

A player’s irrational decisions are driven by an emotional reaction to a negative outcome and that leaves them vulnerable to a smarter opponent. Emotion has a distracting effect that affects the quality of thought. This is especially true in rock, paper, scissors, because the games follow one another extremely rapidly.

Here’s a tip – If you truly want to be victorious, choose paper to start because most people tend to go for rock as an opener. In fact rock is the one item that players tend to use the most. Which is why it makes sense for you to overuse paper.

The other attraction of rock, paper, scissors, is that it is almost impossible to cheat – unless you use psychology, misdirection and suggestion.

So here's how I do it…

Bearing in mind that most games consist of three 'goes' we are only looking for two out of three to win.

I always give a potential opponent a quick demonstration: *'one, two, three…'* and with each count, I bring my fist down into the palm of my other hand. But after the number three, I show them scissors. I don't do this in an obvious way, rather at the same height or level of the actual game.

Sometimes I repeat the same move (also showing them scissors) but you can also do this with paper or rock.

The chances are that whichever move you choose for the demonstration, it will be copied by the other player and will become their opening move. They will do this quite unconsciously, so when we start the game for real, if I've already shown them scissors, I will open with rock, which beats scissors.

If I win, I give a small celebratory punch in the air and say 'yes!' Again, this will unconsciously encourage them to choose rock, while I go for paper… and win again.

Remember, it's the best out of three so I've already won. The problem is, I'm also a show off so I say *'OK, one more, let's see if I can get a hat-trick'* and at the same time subtly show them the palm of my hand. When we go again, they're almost certain to go for paper, in which case I'm going to beat them with scissors again.

This last move is variable. In other words you can choose any one of the three to show them, and you should still get three out of three.

Like successful Poker players, emotions need to be kept firmly under control and minds firmly on the job! OK, ready…? One, two, three…
