SUGGESTION

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The imitation game

A few years ago, in Zambia, a chimpanzee blessed with the unlikely name of 'Julie' started swanning around the jungle with a piece of straw sticking out of her ear. Why she did this is unknown, and frankly irrelevant.

In chimpanzee world, Julie became an influencer. Before very long, other chimpanzees started wandering about with pieces of straw in *their* ears.

A paper in the journal *Science* offers the Zambian chimps' behaviour as further evidence that human beings are not the only animals that follow pointless crazes. Recent human history is full of examples of passing fads.

The passing fad phenomenon extends to hair styles, clothing, shoes, music, exercise, food, make-up, language, and even gender.

In 1998, a solitary male sparrow on the west coast of Canada began singing a new song. The song was soon adopted by other female sparrows and within weeks, more sparrows started copying it. It has now become the dominant sparrow tune across most of North America.

Professor Andrew Whiten, a zoologist and psychologist at St Andrews University, has studied other species that have been influenced by fads and fashions. For instance, when a group of female fruit flies once saw another female fruit fly mating with an unusually coloured male, within days, they all wanted to mate with male fruit flies who had the same colouring.

The fruit flies see that all the girls like one particular kind of fruit fly, and that's an indication he's the best.

And so it is with humans. A pop star dresses or behaves in a certain way and before you know what's happening, teenagers are throwing last years fashions in the bin and begging their parents to buy them the very latest in ridiculous clothing.

The same can be said about tattoos and yes, even anti social behaviour and drug taking. Drugs are bad, but they're not so bad if your fave rock star is doing them.

Children in particular are easily influenced by fads – adults less so.

With so many Social Media Influencers punting a never-ending line of over-priced rubbish, it's no surprise that fads spread faster than a super strain of virus!

The problem is really one of blind acceptance over common sense. Some fads, such as music-making, can be beneficial, others harmful. The trick is to recognise which is which.

Human beings are very suggestible and easily bamboozled.

This is why…

Yawn, cough, sneeze, itch – all these things are contagious. The imitation game is part of the human condition. The information in our genetic code is designed to copy itself, as is every cell in our bodies. New-born babies copy their mother's smile, children copy their friends, teenagers mimic their role-models, NLP aficionados model Richard Bandler, and failed stage hypnotists mimic Derren Brown.

There are many behaviours, reactions and traits that rub off on us from other people, and especially people we admire.

Scientists from the University of Wisconsin confirmed the old adage – if you smile, the world really does smile with you. There are of course, as with so many other behaviours, evolutionary reasons for this. A smile is disarming because it lets strangers know you are non-threatening.

A big factor in 'catching' traits from other people is down to empathy – empathy being a key factor in the human survival strategy. By 'trying on' an emotion or behaviour, we better understand how another person might feel or act. Empathetic responses might go some way to explain why we unconsciously mimic others.

Researchers at Brighton and Sussex Medical School found that volunteers who watched videos of people plunging their hands into cold water also experienced a drop in their own body temperature – more evidence to back up the belief that we are a mind with a body, not a body with a mind.

Humans have been able to survive because we have learned how to cooperate in groups. Empathy is a key part in our ability to communicate with others, from being able to offer support, to making our intentions known and understanding other's intentions toward us. Empathy makes it easier for us to interpret and predict one another's thoughts, feelings and motivations.

Mimicry may even help us understand another person's physiological state and it's almost certainly the reason we yawn when we see someone else yawn. The more empathic we are, the more likely it is we will do it.

There may be an even stronger response in women because they are generally more empathic than men. For instance, women are more likely to seek help from other women. Women have a nurturing instinct and tend to stick together as groups extending from family to friends. Yawning in response to one another is an expression of that empathy.

In 2011, dermatologists at Wake Forest University School of Medicine in North Carolina found that individuals who were asked to watch a video of someone else scratching was enough to induce and intensify itching. When given a few drops of histamine (a substance that can induce itching) on a small patch of skin, they still scratched on random parts of their body, suggesting they weren't responding to a genuine itch.

Professor of dermatology Andrew Wright at Bradford University believes that this may be because itching is a deeply held defence response. It probably dates back to stone-age man, who were covered in mites – if one caveman saw another caveman itching they would assume their skin was also under attack.

So being this tuned in with other people's behaviour can have a real physical effect on our own bodies. Being around people who are stressed, for example, raises our own stress hormone levels.

To prove that stress is contagious, a team of psychologists from the University of St Louis asked a group of people to perform stressful tasks such as public speaking or mental arithmetic while being observed by a second group. The researchers measured the levels of the stress hormone cortisol and another stress-related enzyme in the speaker's saliva as well as that in the observers. They found that the stress response in the witnesses was proportional to that of the speakers they watched – the more stressed the speaker, the more stressed the observer.

Parents have the same reaction when they watch their children perform in the school play or perform their piano piece in public for the first time, so this is nothing really new, but it does explain the biology behind the emotion.

This is unsurprising. There are lots of examples where watching a movie – a thriller for example – will produce the same effect on the audience. That's one reason we watch them!

Even more surprisingly, how much people around you weigh can also affect your own weight. In a study of 12,000 people, researchers from the University of California San Diego found that if one person became obese, the people closest to them were 57% more likely to also put on weight. This is more than just because they share the same sort of lifestyles and diets. Other research has suggested that merely seeing people who are overweight can affect the amount we eat.

In 2011, researchers at the University of Colorado showed volunteers photos of overweight people, normal-weight people, and a neutral image of a tree. They were then asked to rate a plate of cookies by tasting at least one cookie. People shown the over-weight picture ate significantly more cookies. Maybe we should take note of this research and ban fast food restaurants from 'up-sizing' meals, or advertising their 'happy burgers' at a time when children are watching TV.

According to researchers in Sweden, rude behaviour appears to be contagious too, and it infects people like a rapidly spreading virus. They questioned 6,000 people in offices, hotels and restaurants, where working with members of the public is part of their job. They found that witnessing a supervisor being uncivil to another worker was often enough to also cause the observer to be rude to those around them.

However, it's not so much to do with how someone else's rudeness affects your personal mood, but rather that it gives you licence to act the same. It can be the start of bullying – if validation of such behaviour is perceived, it can quickly escalate to levels of increasing unpleasantness, and the longer it's allowed to continue, the more difficult it becomes to break the cycle.

This is something we should all be aware of and it's all the more reason to remember that we should all set an example.

Emotional Contagion is infectious – emotional states are transmitted from person to person at astonishing speed.

As a performance hypnotist I know that one volunteer giggling uncontrollably can, in a matter of seconds, infect the entire group. It's akin to mass hysteria and it's something that's best avoided.

Infectious giggling I thought I had left behind at school, although I can still remember occasions when a class was disrupted by perfectly timed schoolboy humour. Within seconds, the entire class would be straining not to laugh, desperately trying to keep a

straight face while simultaneously praying for the moment to either pass or a quick end to the lesson. The problem was, the more you tried not to laugh, the more you wanted to. Ah… those were the days! It's the old *'try not to think of pink elephants'* paradox.

As if we didn't suspect this already, experts at Reading University have confirmed that people can 'catch' each other's feelings and emotions, and then spread like wildfire to those around us. Mirroring others behaviour is a natural part of the human condition, and this applies as much to laughter as much as it does to enthusiasm, stress, and even depression or eating disorders. Teenagers are particularly vulnerable.

Contagion affects the whole gamut of human emotions. It can even spread from humans to animals, especially pets. Dogs are particularly empathic.

But this is just an introduction to the more serious issue of emotional contagion – emotional contagion really being Mass Hysteria Light.

In a carefully observed study, psychologists discovered that the body posture of people working around you can improve your concentration and focus. Now this really is important news because it has ramifications for the way we study, the way we work, and the way we interact with others.

Stress can be communicated and can be passed on by factors which include tone of voice, facial expression, posture and, if you're close enough, odour.

All this makes perfect sense. Drawing on my own experience as a professional musician, especially of my time with the Max Jaffa Orchestra, when each member of the band had a dedicated 'solo night'. On solo nights, the other members of the orchestra were sincerely rooting for you. As soloist – I had to play two showy pieces every Saturday night – I was acutely aware of the support of other members of the orchestra silently cheering me on. The same was true when the situation was reversed and I unconsciously lent my support to others [except the oboist who was something of a cow, but that's another story.]

The study also suggests that if you are about to start a piece of work that requires a lot of concentration, it might be better to surround yourself with other people who are also concentrating hard. A visit to a university library will confirm this. For some people, the sound of occasional coughs and pens falling to the floor can also provide the perfect backdrop to getting some of their best work done.

I am typing this from my notes in the Emirates Business lounge at Manchester Airport, the nearest thing to academia in my life at the moment! Other passengers are quietly getting on with their business and because we are not surrounded by those less fortunate in pleb class, there is a very professional atmosphere, helped along by the leather chairs, the displays of up-market magazines, five-star buffet and free champagne.

Other people's concentration is also contagious. The level of effort being exerted by people nearby can have an influence on the way you perform. Again, this is true of performance and especially true of large-scale performance where perfection and emotion work hand in hand. Think symphony orchestra or air-traffic control centre. It could explain why many people prefer doing work in coffee shops, pubs, in fact anywhere where we are in the company of others, even if they are strangers, if they are all there for the same reasons – they tend to be busy places where the background noise of other people working, including the staff, is part of the overall experience.

Worthy of a mention here is that a study carried out in 2012 by scientists at the University of Illinois found that ambient noise could also help to enhance people's creativity.

Kobe Desender, a psychologist working at the Vrije Universiteit of Brussels, Belgium has conducted his own study of unconscious group behaviour. Desender thinks the posture of one person can automatically and unconsciously influence people nearby.

It is well known that military displays that include marching and other synchronised activity can affect individuals at an emotional level, even to the point that they may sometimes wish to be part of it. Military tattoos were always a way of encouraging people to enlist, particularly in the 19th and early 20th centuries.

However, Desender and his team are not exactly sure *why* it has an influence, but they speculate it is to do with the more tense body posture adopted when someone puts more effort into a task. There may of course be other factors, such as a change in scent as people concentrate more that could be signalling a shift in attention levels.

Pairs of participants took turns playing a computer game, which was ‘tweaked’ to make it more difficult for either the first or second player. The researchers found that the harder the players concentrated, the more the other player concentrated and this in turn led to better scores. However, if the game was made easier, so much so the first player didn’t need to put very much effort into it, the less the second player concentrated, also resulting in lower scores, suggesting that low effort will also be copied.

All the participants were observed to see how similarly they performed tasks while in sight of each other and also while separated. Reporting their findings in the journal *Psychonomic Bulletin & Review*, the researchers say the results, based on tests on 19 pairs of participants, provide a compelling demonstration that the exertion of effort is contagious.

Again, I can see an almost perfect correlation between this experiment and professional musicians, whose levels of concentration are of the very highest. Next time you watch the Proms, take a close look at the players – they all sit up straight and their posture screams concentration. The same is equally true of team events in sports. Working in the vicinity of highly motivated people gets better results – it might be better to work in the library or in a quiet corner of the café, rather that work from home, with its myriad distractions.

The impact of sitting next to star performers in offices is so large, that just changing seating arrangements to group the right types of co-workers together can boost business productivity by more than 15%. Conversely, toxic workers – the ones who end up being fired for poor behaviour – also tend to drag down people around them. In fact both effects are so disruptive, researchers say that disruptive workers should be let go as quickly as possible.

Other studies have already looked at how office culture can affect performance, but Researchers from Harvard Business School examined the role an individual employee's attitude can have on office productivity. The study analysed two years of data on more than 2,000 employees of a large tech company in several locations in the US and Europe.

The Harvard study looked at information such as when they were hired and fired, the reasons for their termination, where they sat and how they performed. They measured how long it took workers to complete tasks, how often they were unable to complete a task without a colleague's help, and how happy their bosses were with the final result.

'Spill-over' from their performance on neighbouring colleagues was also examined. The results revealed the substantial impact that both ‘stars’ and toxic influences can have in the office. Negative performance from workers *can* spill over to fellow workers and

negative spill-over effects happen almost immediately. The good news is that the effects vanish within a month of the toxic worker being removed. Sitting complementary colleagues together can boost this positive effect.

Putting someone who works quickly but produces average results with someone who works more slowly but produces better results leads to benefits for both. But when those pairs were separated, the benefits ceased.

The results suggest the effect was due to inspiring harder work, rather than learning new skills. It also explains why toxic workers have the opposite effect and why it disappears when the worker in question leaves.

The team found that a worker's performance affects that of their neighbours by approximately 10% and that an average performer seated next to one who is twice as productive results in their co-workers increasing *their* productivity by around 10%.

It's also possible to pick up moods from friends just by being near them. Research from the University of Warwick analysed data from the US government project *National Longitudinal Study of Adolescent to Adult Health,* a study of the moods and friendship networks of school-age teenagers.

The researchers found that moods and symptoms of depression also spread, though not depression itself. The results, published in the journal *Royal Society Open Science* suggest that mood can spread across social media networks.

More and more teenagers are self-harming and considering suicide, so the research could assist public health policy and prepare interventions to combat depression in teenagers.

Part of the problem is social media. Teenagers are uniquely suggestible and thus more susceptible to trends. However, adults are also sometimes as susceptible.

The researchers team examined the individual components of mood, such as appetite, tiredness and sleep, in friendship networks. They found evidence that mood can spread from person to person via a process known as social contagion.

Their findings show that mood does spread over friendship networks, as do symptoms of depression, such as helplessness and loss of interest, but they also found that the effect of friends' depressive moods was not strong enough to send other friends into depression.

They also found that having more friends who suffer worse moods can lead to a higher probability that an individual will not only experience low mood but also a decreased probability of improvement. However, the opposite is true of teenagers who were members of a more positive social circle.

Previous studies have found social support and friendship helps improve mood disorders in adolescents – obvious really when you think about it. Research also suggests that an individual's emotional state can be affected by exposure to the emotional expressions of their social contacts.

Support from friends can be of enormous value to those suffering from depression and can certainly help by spreading positive mood.

Sub-threshold levels of depressive symptoms in adolescents is an issue of great concern because they are not only very common, but a significant cause of reduced quality of life. They can also lead to a greater risk of depression later in life.

Postscript:

In 2018, Norwich City Football Club painted the visiting team's changing room pink, a colour thought to have an adverse effect on the visiting team's performance. The experiment worked because somehow the visiting team were less energetic, less on the ball…

After the game, complaints were made to the sport's governing body who investigated the claims but were unable to come up with any hard scientific proof.

Nonetheless, the issue was resolved by the application of the wisdom of Solomon – in future, teams would be allowed to paint their changing rooms in whatever colour they wished, so long as both changing rooms were painted the same colour!

It has long been known that colour affects mood – red colours increase competitiveness among children whereas shades of blue encourage quiet behaviour. But which colours are best for concentration and which for relaxation is something that has long been debated.

Scientists have at long last been able to confirm that brightly decorated rooms and bright colours such red and yellow, can boost concentration levels. Researchers at Curtin University, Australia, have confirmed that students' levels of focus are improved when they are surrounded by vivid colours.

Student volunteers were given a series of reading and memory tests in six different rooms with six different colour schemes. Students scored *significantly* higher marks when the tests had been carried out in the more brightly decorated red and yellow rooms.

It appears that bright colours can, and do, enhance learning performance by positively affecting the learner's psychological state. The vivid colours were shown to increase arousal. They were also shown to increase pulse rates, whereas shades of blue decreased pulse rates… and learning ability.

These results are consistent with the Yerkes-Dodson Law, which proposes that arousal improves performance up to an optimal level, although too much arousal can cause a drop in performance.

But here's the irony… when questioned, two-thirds of participants believed vivid red wasn't a suitable colour for a study environment because they associated it with danger, anger, discomfort, annoyance and even depression. They believed that pale colours would be a more appropriate scheme for learning environments because they are considered to be calm and relaxing.

Calming they may be, but they may not help students to be alert and active.

Pale colours are good for relaxation. Varying shades of green however, are also good for 'outside the box' thinking, especially if those shades of green are in the form of natural objects such as trees and shrubs.

The undeniable fact is that the students performed better in the vivid colour environments because these colours have arousing properties that stimulate neural activity, especially if the task at hand is boring.

An ethical placebo

The placebo is as old as healing itself – the idea that you will get better because you believe you will get better is a powerful one, and one that doubtless the pharmaceutical companies would like to suppress given the chance.

Powerful new research proves what hypnotists knew all along – you are a mind with a body, not a body with a mind, words that every alternative mind therapist will agree with. The healing power of the mind has definite and traceable physiological responses, including immune responses and the release of hormones.

Some medical experts view the prescribing of placebos as a nuisance. After all, in their view, disease has to be looked at strictly in physical and chemical terms – but they are missing the bigger picture.

If a patient consciously (or unconsciously) believes that a substance is genuinely therapeutic, that it will reduce pain and negate unwanted symptoms, then surely this has to be a good (and inexpensive) thing.

The effectiveness of this belief goes beyond the humble sugar pill – even the sight of a stethoscope or a doctor in a clean white coat can trigger an unconscious reaction, which triggers a positive physiological reaction. Scientists now believe that placebos hold the key to understanding how the brain can control the body as a route to faster healing.

Heading a team at the University of Duisburg Essen in Germany and the Swiss Federal Institute of Technology in Zurich, psychologist Manfred Schedlowski has been finding out how straightforward conditioning can mimic the pharmacological effects of drugs.

First, Schedlowski and his team conditioned laboratory rats by injecting them with the immunosuppressive drug Cyclosporine A, used to prevent the rejection of transplanted organs. At the same time, they gave the rats sweetened water. As with Pavlov's dogs, the rats became conditioned to associate the sweet water with the drug.

Next, the rat's immune systems were weakened. Subsequent tests showed that after actual organs were transplanted, the rats lasted considerably longer having just the sweetened drink without the drug than they did with the drug – proof that behavioural conditioning can mimic the effects of a particular drug. Good news for the mind therapists, bad news for the drug companies.

Experiment on on rats isn't nearly as much fun as experimenting on humans, so in 2003 neuroscientist Fabrizio Benedetti of the University of Turin Medical School tested the influence of Expectancy and Conditioning in 60 people who had volunteered to undergo extreme pain. In these experiments, both the placebo and the drug that increased pain were administered, and the results were the same. It also turned out that merely the expectation of more pain was enough to increase the levels of pain experienced by the volunteers.

Expectation is one of the key components of hypnotic suggestion and here is the proof. It also proves that scientists have all the fun.

The bottom line however, is that unconscious cues and the suggestion inherent in placebos can alter responses created in the complex electro-chemical organ known as the

brain, and positively affect the level of discomfort suffered by those with painful illnesses.

Placebos can activate pain-killing [natural] opiates produced by the brain.

Taking the pain-killing drug morphine is banned in athletic competition, but not during training, so Benedetti was able to further experiment by giving athletes in training morphine – and then an inert saline solution on the day of the big race. Levels of pain tolerance were significantly increased after the saline solution was administered.

You don't have to be an award winning scientist to share in the fun. The good old family doctor can radically improve a patient's condition simply by radiating confidence or spending more time with the patient.

At an unconscious level, the patient will have more confidence in the effectiveness of a particular therapy. Like any other product on the market, patients will prefer the more expensive name-brand drugs than the cheap version.

In 2004, psychologist Cynthia McRae, together with colleagues at the University of Denver performed several pretend brain surgeries on patients suffering from advanced Parkinson's disease. The fake operations were a resounding success! Patients who underwent the sham surgery were doing just as well after a year as those who underwent the real surgery and had their brains implanted with human embryonic dopamine neurons.

The practical benefits of this sort of foolery should not be underestimated. Doctors and scientists all over the world are just beginning to wake up to possibilities brought by the power of the placebo. It doesn't take much sophistication or expensive drugs to make this work…

Researchers from the Centre for Complimentary Medicine Research at the Technical University of Munich, led by Dr. Klaus Linde, have affirmed what we all deep down knew to be the truth anyway… fake acupuncture treatment works just as well as the real thing! The placebo effect is the root of one of the most popular treatments for a range of problems from migraine to blood pressure, to you name it, we got it.

An analysis of studies involving over 7,000 patients proved acupuncture to be more effective in treating migraines than tablets. What is not clear is whether the patients involved in the study were particularly suggestible, but then a study of such magnitude is bound to include a good cross-section of high and low suggestibility. Nor is there any evidence pointing to whether the acupuncturists were properly trained or a bunch of amateurs having a laugh – that would have been a lot more revealing and a lot more fun.

The researchers found that it did not matter whether the needles were inserted in the correct places – along so called 'meridians' or 'energy points' – or at random. The research also showed that acupuncture did nothing to improve fertility, something that should come as no big surprise.

A wealth of studies dating back decades have shown placebos to make people feel better, but they were thought to work only if patients believe they are taking effective medication.

Scientists at the Berlin Medical School looked at a group of 58 students who were approaching their end of term exams to find out if taking a placebo could reduce exam anxiety – even if the recipient knows the pills contained no active substance to treat anxiety – and the experiment worked!

In the two weeks before they sat the test the volunteers were split into two groups and the scientists measured their level of test anxiety, self-management skills, coping mechanisms and belief in their ability to succeed.

The first group took the pills labelled as Open Label Placebos (OLPs) twice a day and were told that they contained no active ingredients. The second group received no medication. This is known as an ‘open placebo’ as opposed to a ‘closed placebo.’

The OLP group saw their anxiety scores drop by four points and their self-management skills increase by 16 points by the end of the study. There were no changes in the control group's anxiety and only a slight increase of two points in their self-management.

The researchers don't know why students' anxiety decreased even when they were aware they were taking inert substances, but they did note that volunteers were told before the study that placebo effects could be 'powerful' and that the body may respond automatically. Or it might be that knowing the placebo *might* work was enough to instil confidence and reduce their fears about the test.

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

Researchers believe OLPs could be used to treat various ailments.

Research conducted by Dr Ted Kaptchuk, a professor of medicine at Harvard University that showed placebos were effective in treating irritable bowel syndrome (IBS) and migraines. Dr Kaptchuk also stated that evidence already shows sugar pills can relieve everything, from agonising lower back pain to excruciating migraines and just like 'real' medicine, people often complain of headaches, thirst, insomnia and even increased urination after taking placebos.

In a recent study of sufferers of chronic back pain, carried out by researchers in Portugal and published in the journal *Pain,* scientists discovered that when patients were made aware they were taking a fake drug, there was still a reduction in pain of about one third.

The researchers concentrated their study on 97 adults who had been suffering from low back pain (the most common type) for at least three months. They were assigned at random to three groups.

Those in the first group received three weeks of treatment that consisted of their usual medication alone. A second group were given only their usual painkilling drugs, while those in the third group got their usual medication as well as placebos – they were told they were placebos and also told how their bodies might respond to the fake pills. The intensity of back pain and disability were compared between the groups.

On a scale of 0 to 10, patients in the placebo group experienced a significant 3 point improvement, compared to little or no significant change in patients who took only their usual drugs.

After three weeks, the patients who were initially given only their usual medication were also offered the chance to take the placebos and the results showed greater reductions in pain in those patients. Overall, honest and open placebo treatment reduced initial pain and disability scores by around 30%.

Few doctors doubt the incredible power of belief in medicine and a surprising piece of research reported in the journal *Nature Human Behaviour* takes that idea one step further.

Researchers believe that subtle facial cues and body language can show if a doctor truly believes in a course of treatment. These subtle cues can also influence how effective the treatment is likely to be.

I think most doctors know this already and instinctively employ a little bedside manner to exploit it. This is not conning the patient – it's making good use of psychology to ensure they get the best from the medications prescribed.

If a doctor writes a prescription with a shrug and mutters that it's an old drug that has some side-effects and possibly not very effective, the chances are the patient won't do well on it. But if the doctor smiles, says they have every faith a treatment will work and that the majority of patients improve on it, there will be a much greater chance the patient will achieve a more positive result.

Obviously, suggestion plays a great part in this process and the way a doctor interacts with patients can have an impact on the perception and belief in the treatment – genuine or otherwise.

If you can reassure a client by treating them in a friendly, but professional way, and show them you are genuinely interested in helping them, this creates trust and a better therapeutic relationship.

We know that a wide variety of factors, including the colour and size of a tablet are responsible for how effective a medication is. Studies have shown that green tablets are more effective in treating anxiety, but yellow tablets seem to work better with depression, while the colour red suggests to patients that the drug works quickly. Capsules are more effective than tablets – not for any pharmaceutical reason, but simply because we believe they will act quicker, so they do.

In 1996, an analysis in the *British Medical Journal* (BMJ) of 12 studies suggested that the colour of drugs can alter their effectiveness in patients.

Epidemiologists at the University of Amsterdam found that people often associate red, yellow and orange tablets with the type of stimulant effects found in medications such Ritalin, used in the treatment of ADHD, and the narcolepsy drug Adderall. Patients associate blue and green tablets with tranquillising effects, such as those produced by drugs such as SSRI (selective serotonin re-uptake inhibitor) antidepressants, as well as benzodiazepine sedatives.

Researchers found that when the colour matched the drug's expected effects, it worked significantly better in patients. Conversely, when the colour of the medication clashed with expectations, the drug was not as effective as it had been in trials that used colour-free tablets.

Something similarly disruptive may happen when the colour of a patient's drug is unexpectedly altered, according to another study in the BMJ, published in 2013 by specialists at Brigham and Women's Hospital in Boston, Massachusetts.

The study monitored more than 61,000 patients with epilepsy for five years and found that when the colour of their prescription pills was changed, they became up to 27% more likely to stop taking them, raising the risk of a seizure. Patients come to trust a particular colour of pill, and when it changes, they often worry that the pill is less effective or more dangerous.

The colour of rooms where healthcare is delivered can also alter our perception of medical care – and aid recovery. A report by Dulux, *Transforming The Healing Environment*, looked at how colours make a difference to patients, reported *'well-chosen decor can contribute positively to the creation of an environment in which patients can feel comfortable and at ease'*.

Research shows that orange stimulates the appetite while blue can suppress it. This has led to the creation of very specific colour schemes for dining rooms in mental health facilities treating people with anorexia. Yellow is often avoided in maternity and neonatal wards because, while associated with joy, happiness and energy, it also makes babies cry – possibly because it activates the anxiety centre in the brain.

Consultation rooms tend to be warm, neutral colours to make patients feel at ease, while operating theatres are mostly green or blue/green to counteract the effects on the eye of prolonged staring at the deep red of an open wound.

Cost can also be a factor. In one U.S. study, patients were given mild electric shocks and told to take a painkiller. Half were given a tablet that allegedly cost $2.50, while the other half were given one costing just 10 cents. In fact, both tablets were identical.

85% of the $2.50 group reported a reduction in pain, while only 60% of the 10 cent group reported any reduction.

If patients are told how much tablets cost, they are more likely to take them regularly.

There is an unresolved ethical issue concerning the use of placebos, routinely prescribed to patients because their effectiveness has long been proved and understood, especially in cases where illness is psychosomatic. But is it really acceptable to lie to the patient?

Informing patients they are getting nothing more than a sugar pill circumvents the ethical dilemma. More important, even when people know they're taking a placebo, they still experience improvement.

People with asthma who were given a placebo inhaler reported it had brought them relief, even though subsequent breathing tests revealed that their health was no better. But.. the patients *did* believe it!

The placebo effect is being studied more than ever before as interest in the phenomenon gains ground. More recently, researchers from Harvard University and the University of Basel treated participants with a 'topical cream'.

One group received no treatment. A second group was given a placebo but were told it was a topical cream containing Lidocaine, which numbs the skin and relieves pain. A third group was given a placebo without being told it was a placebo.

The fourth group was given the placebo after the scientists took great care explaining 'the placebo effect' to them. The researchers explained that the effect was powerful and that it had been found to cure pain, migraines, depression, asthma, and symptoms of Parkinson's disease. Members of this group were also told that their bodies could automatically respond to placebos. Then after the cream had been applied, the researchers asked each participant in the group how they were feeling.

Participants who were told they had been given a medicinal treatment and those who knew they were being given a placebo but also told about placebos healing properties reacted in the same way following their treatments.

Both groups reported they experienced less unpleasant effects after they had the topical creams applied to their forearms. Those who knew the cream was a placebo believed in its healing powers just as much as those who believed it was genuine.

Pure suggestion or what?!

The analysis has again brought into question the necessity of deceiving people prescribed placebos by telling them they are taking active medicines, and has expanded on previous research that shows placebos really can heal, or at least alleviate ailments.

The report was published in the *Journal of the International Association for the Study of Pain*.

The placebo cannot be a 'one size fits all' therapy – there are lots of conditions where a placebo might be inappropriate, but these decisions are best left to the doctors and the specialists. But the placebo should become a more important part of mainstream medicine.

In the third world, traditional healing has relied for thousands of years on the placebo effect.

What we need is a greater and more universal understanding and acceptance of its dramatic effect.

Subliminal messaging

September 12 1957, Fort Lee, New Jersey… A market researcher by the name of James M. Vicary decides to carry out a unique and ground-breaking experiment in which an unsuspecting cinema audience is bombarded with subliminal messages – ‘Eat popcorn, drink Coca Cola’ appears on the screen for three milliseconds. The result was that sales of Coca Cola increased by 18% and popcorn by 58%.

Just to throw a cynical spanner in the works, I am honour-bound to point out that the cinema-going ‘guinea pigs’ were watching a film entitled 'Picnic' at the time.

Nonetheless, the resulting public outcry, based on a very reasonable fear that people would henceforth be open to brainwashing, formed the foundation of the urban myth that became known as Subliminal Advertising.

On October 5 1957, the Saturday Review published a scathing article accusing advertisers of *‘breaking into the deepest and most private parts of the human mind…*'

Such was the public disquiet about subliminal advertising, the USA, along with the UK and Australia, all passed laws prohibiting its use.

They needn't have bothered. Researchers, including law enforcement agencies, politicians and advertisers trying to replicate Vicary's findings drew a blank – even an excited CIA became involved and issued a report. But, when confronted with the evidence, Vicary confessed that his work was a gimmick.

Too late! The damage had been done and the idea that you could manipulate people's desires with unconscious subliminal messaging became part of the collective counter-culture.

Everything you have probably already heard of was tried – flashing messages on a screen for a few milliseconds – even embedding audio messages played backward in the soundtrack (a process known as backmasking.)

Backmasking doesn't work, and has been proved not to work. Yet some American church groups charged that heavy metal artistes Ozzy Osborne and Judas Priest were using it to infiltrate satanic messages into the minds of young Americans. As if.

Those stupid American Jesus worshippers even held record burnings. They'll be burning books next, and we all know what happens when you start burning books! The cases were quite rightly laughed out of court, but still served to underline the public's distrust of anything ‘subliminal.’

In the meantime, psychologists discovered audiences do consume more snacks and drinks – and even smoke more cigarettes – when they see actors eating, drinking and smoking on screen. For many movie fans, popcorn, ice cream or a fizzy drink is part of the cinema experience [in my case, falling asleep and wishing I’d saved my money is often part of my cinema experience!] but this unconscious desire to imitate behaviour is especially powerful if the star of the film does it – and this includes bad language and violence.

Previous studies have confirmed that on-screen performances can exert a powerful influence on snack consumption and audience behaviour, not to mention calorie intake! Researchers at Cornell University in New York State previously found that non-stop action in movies prevents viewers thinking about how much they're putting in their mouths, but the Cornell team think that the presentation of eating on screen has an important influence on viewer's eating habits.

So do audiences copy characters by stopping eating when the character stops, or do they carry on snacking?

To test this, researchers recruited 147 students and got them to watch two scenes from the 2004 film 'Harold and Kumar go to White Castle'. The film features two marijuana-smoking friends who get involved in a series of mishaps on the way to a hamburger bar called White Castle. In one scene, the characters star eating a meal and complete it – in another, they ate constantly through the whole scene.

Unsurprisingly, the researchers found that viewers consumed larger quantities of food when the two main characters carried on eating. The same behaviour has been observed in smokers who are more likely to smoke when others around them are smoking, although that effect has been reduced because of the ban on smoking in public places.

Given the amount of unhealthy treats consumed by your average movie-going American, the research carries some importance. Some large popcorn bags reportedly contain up to 1,800 calories – more than the entire recommended daily allowance for a school-age child. In the UK last year, a YouGov poll of 5,000 adults found Brits spend an average of £7.85 per person on snacks at the cinema, although £4 for an ice cream is not unusual!

So forget the subliminal messaging – the sight of Mr Creosote forcing that last waffer thin mint is more likely to do the trick!

The 1980s and 1990s saw the new craze of 'subliminal' self-improvement tapes – also complete and utter nonsense, and proved to be nonsense by Anthony G. Greenwald of the University of Washington and his colleagues.

Greenwald tried the tapes – ostensibly designed to improve self-confidence – with a control group. Only half the tapes contained subliminal messages, though the participants were told that all the tapes did. The result? There was no difference between the two groups who took part.

The experiment did have one unexpected consequence though. Those participants who believed they really would gain more self-confidence after listening to the tapes did report an improvement. But this improvement was spread equally over the two groups, and so the cause of the improvement was nothing more than the influence of our old friends, suggestion, expectation and the placebo effect.

However... Although subliminal messaging cannot override our free will or our morals or values, or even our intentions, it might just have an effect on the way we make decisions.

Advertisers affect the way we make decisions, even important ones and the ruses they employ to make this happen are legion, and well understood. These days, advertisers concentrate on selling the lifestyle associated with a product rather than the product itself. After all, who can resist something that not only cleans your carpet but also solves all your social issues? In the whacky world of advertising, all families are happy, they drive beautiful cars, and their children never have spots.

But back to Subliminals – a word I have just made up.

Most recent experimentation has centred on increasing the subject's desire to choose branded drinks, such as Coca Cola over plain water. This is a difficult study because in the US, most students drink Coca Cola anyway, and they are the ones most likely to volunteer for these 'in house' experiments.

What is clear however is that in some experiments, flashing the word 'thirsty' can significantly increase the desire for liquid refreshment by up to 80%. The choice of drink though is generally in line with the subject's established tastes – flashing the name of a particular brand doesn't seem to have any significant effect on their choice of beverage.

But what about trying to sell products other than drinks?

Again, we turn to the advertisers for inspiration. It is well known that the smell of freshly baked bread in supermarkets encourages customers to buy not only bread, but also a variety of other food products.

Any delicious smelling food can make you feel hungry, in exactly the same way the sight of a freshly squeezed lemon can make you salivate. It's almost irresistible in fact. If you want to ruin a trumpet player's solo, then make sure he can see you suck on a lemon just before he raises the instrument to his lips! Apparently the smell of lemon-fresh cleaning fluid can make someone think about doing the cleaning. [This is one I must try!] However, the effect is very short-lived.

I distinctly remember that when I was doing late night hypnotism shows in various English seaside resorts during the early 1980s, I noticed that my subjects seemed more receptive, both in terms of hypnotisability and their ensuing performance, because people are generally more relaxed or even tired at 11.00pm. And drunk.

It's not just a question of tiredness it's also a question of how aware they are and the results of the subliminal researchers bear my observations out. Hypnotised subjects are more susceptible to persuasion when they are tired than they are normally. Volunteers in subliminal messaging experiments seem to gravitate more toward a specific brand when they are tired.

It is worth noting that a similar reaction occurs when a product is associated with revulsion. When images of a particular product are flashed onto the screen during a documentary about the botfly for example, subjects are less likely to choose it because of its association with something rather nasty. Association is not only well understood in psychology, but is one of the cornerstones of hypnotherapy and NLP.

Walk into any supermarket in the weeks leading up to Christmas, and you are very likely to find yourself listening, albeit unconsciously, to Christmas music. Christmas is a time of giving. It's also a time of buying! And spending more money than usual.

Christmas music increases this impulse. I'd love to see an experiment to see if it has the same effect in the middle of July!

So, just as we are scratching our heads wondering whether or not there really is anything of substance to subliminal messaging, along come Charles Areni and David Kim of the Texas Technical University.

Over a six-week period they alternated classical music with pop music in a wine shop. No big surprise here... Customers bought more expensive wine when the classical music was

playing and spent less when the pop music was playing. This makes complete sense. Who in their right minds, would now play records by Gary Glitter in their shop, or use images of Jimmy Savile to entice customers?

The Texas research was replicated and confirmed by Adrian North and his team at Leicester University in the UK. He found that customers spent 10% more in a restaurant on evenings when classical music was playing in the background than they did when pop music was playing, and an overall drop of 2% when no music was playing.

And so to the local bottle shop… Adrian North found that when he played German Oompah band music, customers displayed a preference for German wine. When French music was played, they purchased more French wines, even though both were displayed in equally prominent positions. When questioned later, hardly any of the customers could recall what sort of music had been playing.

Again, association appears to be the true deciding factor here. (The scene where Malcolm McDowell is forced to watch film of an extremely violent nature backed with classical music in Stanley Kubrick's film ‘A Clockwork Orange’ illustrates this perfectly, although the film is a futuristic fantasy.)

Environmental cues affect our judgement, and hence our behaviour, all the time – we just don't notice it.

Environmental cues have already been harnessed to increase impulse buying, so I'm not sure that subliminals offer anything new. They are a weak force, and only effective when served up at exactly the right moment, to coincide with a decision about to be made anyway, and are effective only in relation to a person's predisposed preferences, intentions or habits.

It is unlikely that (unlike post-hypnotic suggestion, which resides and takes place in the *conscious* mind and all actions undertaken in hypnosis are consensual) subliminal suggestion could ever compel anyone to take action much later on. As yet, there is no recorded instance of that happening.

Anyway, before we get bogged down in this any more, it’s all been tried and found wanting. So that’s it. Subliminal suggestion, advertising, messaging, brainwashing, whatever you want to call it, doesn’t work.

It’s all about the image…

Strange but true… when I was a lad, all comedians wore dinner suits, except for the ones that wore wore velvet jackets and frilly shirts with unfeasibly large multi-coloured velvet bow ties.

Then, suddenly, comedians decided they would go all political and anarchic and… alternative. Suddenly, out went the penguin suits and in came jeans and t-shirts and an avalanche of foul language. The Wheel tappers and Shunters Social Club closed its doors and and is now almost forgotten… a faint memory of a bygone era, in the same way the music halls are remembered only in occasional documentaries about what life was like before the War.

Out went the mother-in-law jokes and the stereotyped racial humour audiences were used to [black comedian Charlie Williams was the worst offender, but I supposed he was entitled to be]. In came a new kind of social commentary, a new kind confidence, born of anger and frustration with the system. Even the street magicians put away their tailed-coats and spangled assistants and donned their new streetwise leather jackets. The only ‘acts’ that seemed impervious to the change were the stage hypnotists.

Stage hypnotism in the 1960’s was dominated by the old guard – Peter Casson, Edwin Heath, Johnny Hillyard, Tony Sands, to name them all. All wore smart dinner jackets and even white tuxedos. By the end of the 1970’s, they were all but retired as the old Workingmen’s clubs, the British Legions and the social clubs closed their doors one by one.

When the new breed of hypnotists arrived in the early 1980’s, they remained stubbornly wedded to their black suits and black shirts. The new breed of stage hypnotists looked exactly like the old breed of stage hypnotist.

I recently did yet another tour of New Zealand, on stage dressed in dark denim jeans and a trendy shirt. Even so, some nights I played it safe and took the precaution retreating to the safety and authority of what always worked best and wore a jacket.

So... does formal attire lend an air of wealth and status and therefore authority to the wearer? Er... yes it does.

Performers usually do dress ‘up’ to perform their acts. What would impression would David Bowie make without the skin-tight body stocking, Suzi Quatro without the leather jacket, or Roy Wood without all that hair and make-up? Even an early Derren Brown sported a slightly creepy Dr. Strange look. Anyway, speciality acts are renowned for looking the part. And most of us would look ridiculous in show-biz fancy dress. Even Danny La Rue looked relatively normal away from the theatre.

So it’s time for a bit of *Mythbusters* style research to find out if it’s the pleasing design or the label that really matters!

Step forward Rob Nelissen and Marijn Meijers of Tilburg University in the Netherlands. They have found in their experimental research, which mostly consists of getting people to meet other people togged out in designer labels such as Lacoste and Tommy Hilfiger, that designer clothes elicit cooperation from others!

But be warned… this only works when the label is obvious.

Volunteers for Nelissen and Meijers' experiment were shown pictures of people wearing both designer and non-designer clothes. In most cases the label had been digitally removed.

Those taking part had no prior knowledge of what the experimenters were trying to find out, because that always skews results with unconscious bias. So when they were asked to rate the status of the person in the photograph, they did so completely honestly.

On a 5 point scale, the difference was a staggering 2.91 for no logo, to 3.5 with logo, in terms of status and wealth. Quite a difference.

Another experiment involved a woman attempting to stop strangers in a shopping mall, ostensibly for a survey. With the designer logo in evidence, 25% of shoppers were willing to answer questions, as opposed to only 13% when there was no logo.

The same happened when volunteers watched a film of a man being interviewed for a job. The interviewee on the film got a 9% higher rating when the logo was in evidence.

All this has echos of Leonard Bickman's experiments in the early 1960's the he found that people were more likely to pick up a piece of litter and put it in the bin if they were asked to do so by someone wearing a uniform. And Stanley Milgram's experiments to see how far people would go when confronted with perceived legitimate authority.

Many Japanese men do not remove the sleeve label on an expensive suit because wearing expensive designer clothing confers respect on its owner. In some countries and cultures, this would be considered showing off, but it is perfectly acceptable in the Land of the Rising Sun.

Women collecting for charity earned nearly twice as much when their designer logos were obvious [I hope you get the irony there!] especially when that activity involved door-to-door work.

The brain can be tricked into associating ostentatious displays because of an underlying yet unspoken quality.

And what if the logo is fake? Bad news if you are caught out on this one. The perceived value or quality goes for nothing. Tough luck, you have just been found out and you credibility rating plummets.

Avant Garde artiste Tracey Emin sold her unmade bet as a work of art for a small fortune only because it had her name on it. Anyone else's collection of bedroom souvenirs would be worthless.

So… want to impress? An unhealthy complexion and bad teeth won't do the trick, but even a fake Louis Vuitton will, so long as you don't get caught out!

It seems the human evolutionary survival strategy that has developed our ability to weigh up biological perfection doesn't work with artefacts. Humans can't see past the superficial, even when what lies beneath the label is pure dross, which is probably why Paul McKenna keeps telling us how rich he is.