How to trick your mind to break bad habits and reach your goals

Our brains evolved to help us survive in an age where food and rest were hard to come by. To help you stay fit and healthy in the modern world, here's how to game your brain

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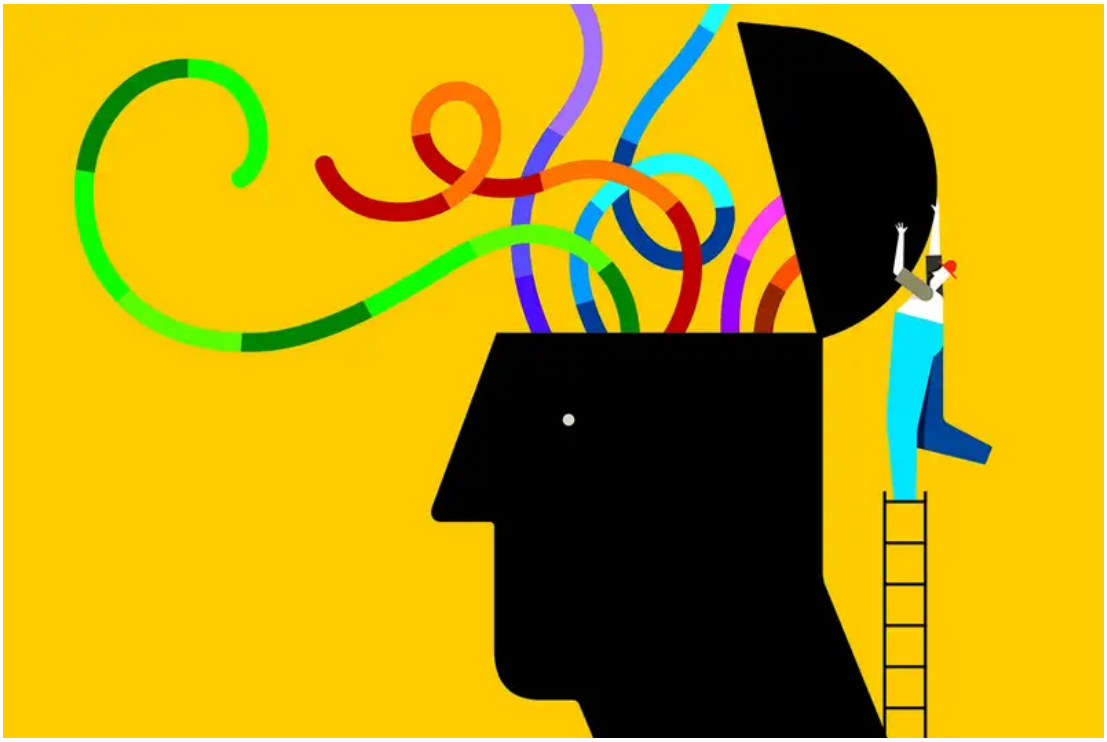


Martin León Barreto

By **Caroline Williams**

"JUST do it," they say. If only it were that easy. It doesn't seem to matter how much you want to get fit, eat better, spend money more wisely or work towards a promotion, something always comes along to knock you off course.

The good news is that it doesn't make you a bad person, it just makes you human. The human mind didn't evolve to love exercising and eating veg. The reality of the hunter-gatherer life that shaped us was that exercise was non-negotiable and if you found something sweet, fatty and edible, resistance was an option – just not a very sensible one. As for sitting still and concentrating for hours on end, forget it. Our minds were shaped to scan the horizon for danger and opportunity.

Unfortunately, this means that most of our long-term goals work against what our bodies and minds have evolved to do. So, what's a modern human to do? The only thing for it is to game your brain. So here are the most scientific ways to do just that and reach your goals, in spite of yourself.

Change your surroundings

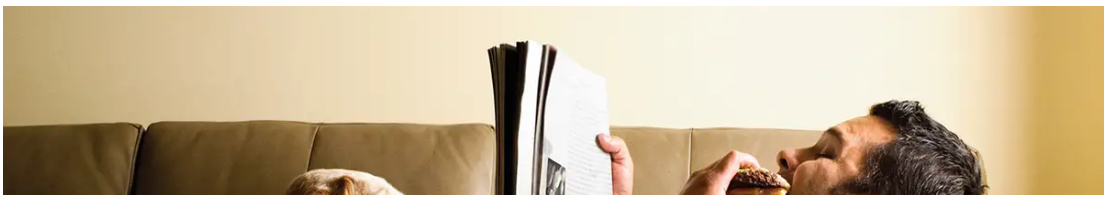
We like to think we are creatures of reason and purpose. In reality, we mostly sleepwalk our way through life, responding to whatever is under our noses. "Environments cue our behaviour – often without our awareness," says Theresa Marteau, director of the Behaviour and Health Research Unit at the University of Cambridge. Worse, the environment often has a stronger influence on our behaviour than the beliefs we hold in our heads.

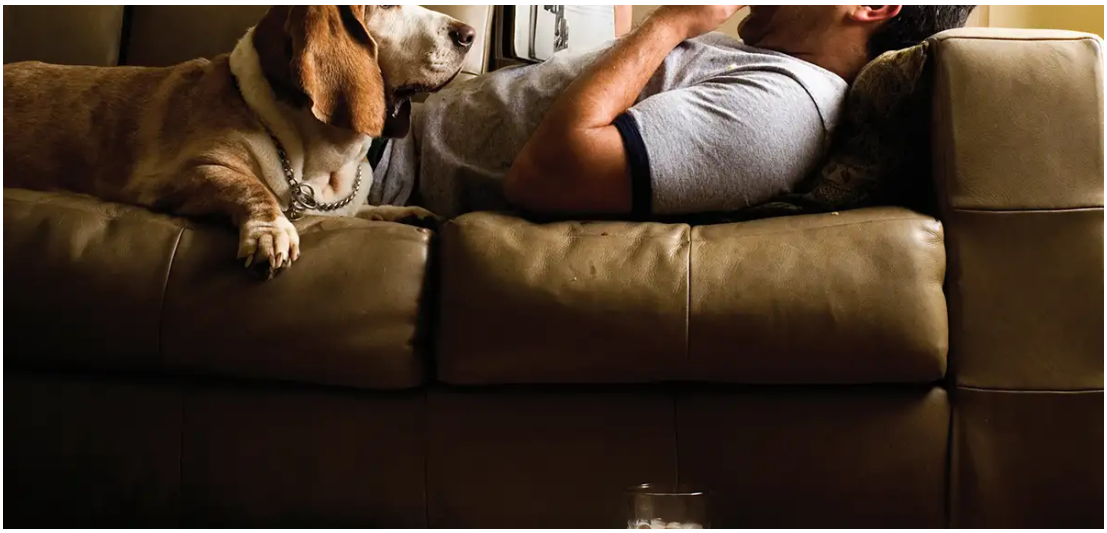
This is a problem, because, like it or not, we live in an environment that encourages a sedentary lifestyle packed with calories and adverts that put cravings into our heads. Most of the time we don't even know that we are acting on them. According to one study, adults mindlessly drink 1.5 glasses more booze after seeing people drinking on TV. And adults and children alike snaffle more snacks after watching food-based adverts.

Ads are only a part of the problem. Our routines become automatic programs that run without any conscious input: reaching for a biscuit to go with a cup of coffee, or a beer when you get home from work, for example. These kinds of habits are tough to break, so your best bet is to make them more difficult to unthinkingly enact.

Marteau says that the only environment we really have control over is the home, so start there – perhaps by ridding the kitchen cupboard of high-calorie snacks and booze, and putting healthier options in their place. Using smaller plates and glasses can also reduce the amount we eat and drink in one sitting. Muting adverts on the TV may help stem the flood of bad ideas.

And if you are trying to lose weight or save money, always eat before you shop – and not just when getting food. Research suggests that shopping hungry is a sure-fire way to spend more than you intended.





Blame your brain for being unable to exist
Steve Cole/Getty

Remember your future self

"Shark sighted today. Enter water at your own risk."

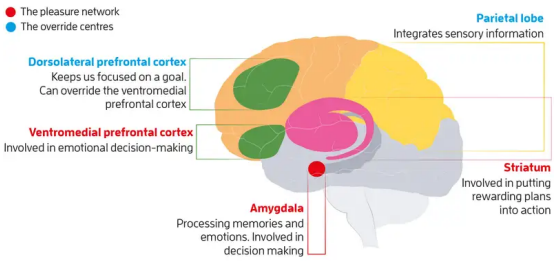
As warning signs go, it is persuasive. The possibility of being bitten or killed is enough to put anyone off a swim.

But, let's get real: sharks killed five people in 2018. About 3.2 million deaths every year are attributed to inactivity. So why do we find adverts warning of the perils of a sedentary lifestyle, like ones admonishing us to get off the "killer sofa", less scary?

Simple, says Huda Akil, a neuroscientist at the University of Michigan. Our brains are wired to prioritise present, certain risks over something that may happen further in the future. "Immediate response to threat is very strongly wired in all organisms, as it is essential to survival," she says. Longer-term threats are less obvious, so don't kick off a stress response. Instead, they rely on our ability to think ahead while also having to combat the emotional lure of short-term pleasure.

Battlefield brain

Whether we can stick to our goals depends on activity in many interconnected brain regions



This tendency to prioritise the certain present over the more nebulous future is the reason we spend money now and worry about our retirement later, or eat the cookie now, leaving our summer selves to worry about the spare tyre.

Brain-imaging studies provide clues about why this might be. They show that when we think about our future, brain regions that process information about the self stay silent, and areas of the brain that process information about other people come online. It is as if we consider our future self to be a stranger whose problems are nothing to do with us.

There are ways to look out for future you, though. People who see computer-generated images of how they may look in old age, or who are asked to consider ways they will remain the same years from now, make more future-friendly choices.

In the here and now, though, the best bet might be to load the good choices with emotion, or try to engineer a sense of urgency. "For example, having a baby can suddenly motivate someone to stop smoking when no amount of information and prodding had worked before," says Akil.

Don't rely on conscious thoughts

When it comes to changing your behaviour, knowledge isn't necessarily power. A 2016 analysis of more than 10,000 people who were told that their lifestyle and genetics are speeding them towards an early grave found that while it changed the way they thought, it made no difference to what they actually did.

It is something that we are all guilty of to some extent, and it happens not because we are weak, but because, most of the time, we aren't consciously in charge of our actions. The vast majority of the time, our brains tick over at the unconscious level, responding to cues and enacting habits that are often at odds with our conscious intentions.

Ryan Garcia

Habits are enforced by a deep brain structure called the striatum, which coordinates the way our decisions and behaviours add up to a feeling of pleasure (see "The brain's decision-making battleground"). While a habit is developing, there is conscious input from the prefrontal cortex, which is involved in planning and impulse control. If we repeat the behaviour enough, the prefrontal cortex is taken out of the equation, leaving only reward and action parts of the loop, so our planning skills are free for other things.

The brain's decision-making battleground

What we do in the face of temptation depends on the activity in several brain regions, some devoted to pleasure and others that are in charge of our long-term goals. Your chances of staying on track depend on which circuit is dominant at any one time.

In the pleasure corner, the ventromedial prefrontal cortex, which is involved in emotional decision-making, links to the amygdala, which processes emotions, and the striatum, which is involved in putting rewarding plans into action. This network, which chugs away below the level of consciousness, is what makes us choose fun, chocolate and beer, or whatever happens to feel good at any given moment. This might not always be the unhealthy option – if you happen to love vegetables, exercise and work.

If, however, your long-term goals don't match what feels good, another circuit needs to cut in to help you stay on track. The dorsolateral prefrontal cortex is in charge of inhibition, attention and switching behaviours, and can override the will of the ventromedial prefrontal cortex.

But you need to keep your eyes on the prize. Being distracted, overloaded or stressed is likely to take your attention elsewhere and leave you vulnerable to fun, but unhelpful, slips.

The good news is that these loops can be rerouted, but it takes a huge amount of conscious effort. To stand any chance of success, says Marteau, the first step is to admit to ourselves that we aren't consciously in charge of our own behaviour.

Believing in willpower can help too. For decades, psychologists thought that when we exert self-control we run down our reserves of mental strength, leaving us vulnerable to a slip later in the day. But recent research suggests that it might be more to do with attitude. This showed that people who believed willpower was an unlimited resource were not only better at self-control tasks in the lab but also had better exam grades, ate more healthily and spent money more wisely than those who considered self-control to be limited.

Chill out

Being stressed is about the worst thing that can happen if you want to get the best out of your brain, and this is especially true when it comes to

Our ability to ignore the call of immediate pleasure in favour of a less pleasurable long-term goal relies on a complex back and forth between two bits of brain circuitry. Stress throws a spanner in the works, short-circuiting the network that takes care of self-control and boosting the one that tells us it is good to be bad.

Todd Hare, a neuroscientist at the University of Zurich in Switzerland, put volunteers under stress and then asked them to make a choice between tasty unhealthy food and less tempting healthy options. Stressed volunteers were more likely than stress-free participants to choose taste over health.

> **"Stress boosts the brain network that tells us it is good to be bad"**

Brain-imaging showed that it happened because stress increased the strength of messages between emotional decision-making regions and the striatum, which drives wanting something and provides the impetus to get it. Stress also decreased the influence of the dorsolateral prefrontal cortex – which controls impulses – on the circuit, essentially letting pleasure run the show.

Keeping on track doesn't have to involve cutting stress out of your life completely. In Hare's research, the biggest impact on self-control came not from the stress levels assessed by measuring the levels of the stress hormone cortisol, but from a person's perception of how stressed they were. Learning coping strategies might be a good way to stay on track, says Hare.

And if you do fall off the wagon after a tough day, don't give yourself a hard time, because that may make you more stressed, starting the vicious circle again. "Maybe note that you failed in this case but move on without ruminating and don't beat yourself up about it," says Hare.

Nag thyself

As every dictator knows, the best way to get people to behave is to put your face everywhere, the larger the better. Being watched – even by a photo showing a pair of eyes – has been shown time and again to make us watch our behaviour.

It also works when we keep an eye on ourselves. Keeping a diary of unwanted behaviours has been shown to reduce mindless snacking, nail-biting and smoking, and to reduce intrusive thoughts in people experiencing anxiety. This is effective because it brings our unconscious habits to our conscious attention, both encouraging us to make better choices and chipping away at the unconscious desire as we forge new habits.

There is a catch, though: it only works on things that are true habits, in other words, things that you aren't aware you are doing. Tracking alcohol intake doesn't seem to make people drink less – perhaps because most people don't tend to drink alcohol without at least a modicum of conscious thought. You also have to be unhappy with the behaviour in the first place. If you consider your vices to be normal – or something you deserve after a hard day – then monitoring won't make any difference.

Another catch is that self-monitoring can sometimes backfire. A large randomised study has shown that people following a weight loss intervention who used an exercise-tracking app lost less weight over two years than people in the study who didn't use the app. One explanation is that the monitoring might lead people to overcompensate in other areas, like diet.

Don't think positive

Beware the cult of positivity. Research suggests that fantasising about successfully reaching your goals – whether it is losing weight, snaring your dream partner or landing a promotion – makes it less likely that you will actually achieve them.

That's because fantasies conveniently skip to the end of a challenge, remaining sketchy on what is needed to get there. This tricks the body into relaxing as if it had already crossed the finish line. Blood pressure drops, robbing the brain of the fuel it needs to really get stuck in. Several studies have also linked positive fantasies about the future to an increased likelihood of depression months later.

Believe in willpower but don't think too positively
Fatcamera/Getty

Strangely, focusing on the worst-case scenario might actually be more effective. In one study, people who were anxious about public speaking performed better if they were first allowed to focus on the likelihood of messing it up. This "defensive pessimism" works because, unlike fantasising about success, it gives your brain a much-needed kick up the backside.

Train your brain

Everything you do changes your brain – at least temporarily. Whether it is possible to deliberately change your brain to achieve a specific goal, however, is an open question.

Turning good intentions into restraint is the job of the brain's executive control system, much of which is found in the prefrontal cortex. This cortex works with the parietal lobe to keep our attention on a goal for long enough to make progress towards it, while inhibiting our less-than-sensible impulses.

Some people believe that activity in these networks can be boosted with training. For example, Barbara Sahakian, a neuroscientist at the University of Cambridge, has found that an iPad game called Decoder, which involves cracking numerical codes while ignoring distractions, improved people's ability to stay "in the flow" and, potentially, to stick to their goals. "I think that cognitive training is a way for people to change and develop improvements in cognition and behaviour," says Sahakian.

The million-dollar question for all types of cognitive training, though, is whether improvements seen in the lab translate into lasting real-world change. So far that hasn't been shown. In one recent study, cognitive training did improve volunteers' diets for the month after the study but didn't translate into lower weight after six months.

Andrew Jones, a health psychologist at the University of Liverpool, UK, recently reviewed the evidence that health behaviours can be trained. "These kind of cognitive training paradigms might demonstrate some promise under laboratory-based conditions, [but] they very rarely translate to sustained behaviour change in the real world," he says.

The good news is that in future we might be able to work more directly on the brain's motivation and impulse control systems. In one recent study, applying a small electrical current over part of the frontal cortex enhanced decision-making and impulse control. In another, volunteers were trained to increase their own brain activity in the ventral tegmental area, which is involved in the release of the motivating neurotransmitter dopamine. In theory, this should have boosted their motivational levels.

Neither technology is available outside of the lab – yet. But one day taking direct action on your flawed human brain might be possible.

Do something else

If you want to eat better, join an exercise class. That was the conclusion of a 2015 study that followed more than 6000 people for four years. People who upped their exercise during the study period increased their intake of fruit and vegetables more than people who already exercised regularly or who gave up their fitness plans early on.

The explanation for this is that, since both behaviours share the same goal, doing one gives you a head start on the other. These "behaviour spillovers" can affect many aspects of our lives. Research shows that taking up recycling at home can lead to more environmentally friendly shopping decisions, and giving money to charity makes it more likely that you will do the same again.

But beware. These spillovers don't always have positive effects. Doing a "good" thing – going for a run, for example, or eating a healthy snack – can sometimes lead you to feel that you have earned the right to do something "bad".

No one said that outsmarting yourself was going to be easy.

Will decluttering keep your mind on track?

Think of what you could have achieved if you hadn't wasted all that time searching for your keys beneath piles of papers.

If this sounds familiar, you're not alone. "People waste up to 3 hours a week finding things that are lost in clutter on their desk," says Joseph Ferrari, a psychologist at DePaul University in Chicago. His research has shown that people with more clutter in their homes and offices are less likely to get stuff done, and more likely to be stressed and unhappy than people with less clutter. Sabine Kastner, a neuroscientist at Princeton University, has an idea why. She has found that when an object in our field of view is surrounded by clutter, the brain receives a weaker signal from whatever it is we are trying to look at.

So can clearing the decks keep the mind on track? Not necessarily, warns Kastner. The brain's attention system evolved to deal with the busyness of the natural world. Making everything too shiny and clean might backfire, by stopping our attention system from kicking in at all. "For people with a very strong attention system, it might be beneficial to have clutter because it stimulates that system," says Kastner.

For people who struggle with attention, though, it is a different story. Clutter can be mentally exhausting leaving little in the tank to take care of other goals in life, says Kastner. "If a person is highly distractable, yes, reduce the clutter," she says.

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