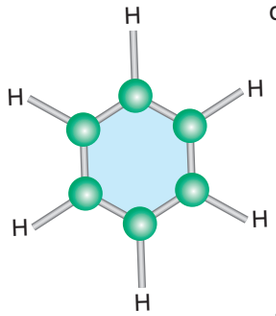
CHAPTER FIVE

LEFT BRAIN, MEET MR RIGHT

Helping the two halves of our brains work together.

DRIVEN TO DISTRACTION[1]

Now the real fun starts. Once we've defined what the problem is we can begin to unleash our creative powers to solve it. There are some powerful techniques to use, beyond just staring into space or taking a hot bath waiting for that 'Eureka!' moment,[2] although it has to be said just staring into space or taking a hot bath can actually work (as can having a shower, or doing some exercise, or going on a bus). **Once the brain has been given a clear problem to work on, doing something completely different lets it stew for a while and do its voodoo.** Organic chemist Friedrich August Kekulé was drowsing in front of the fireplace when he came up with his big idea. He saw in the flames an image of snakes biting their own tails and that helped him depict the chemical structure of benzene as ring-shaped.



Mathematician Henri Poincaré wrote[3] about his own experience of a creative solution popping up when he was distracted doing something completely unrelated: 'I turned my attention to the study of some arithmetical questions apparently without much success and without a suspicion of any connection with my preceding researches. Disgusted with my failure, I went to spend a few days at the seaside, and thought of something else. One morning, walking on the bluff, the idea came to me … that the arithmetic transformations of indeterminate ternary quadratic forms were identical to those of non-Euclidian geometry.'

[1]There isn't any place called Distraction anywhere that we could find, which seems like a wasted opportunity for some funny dialogue.

[2]As Archimedes did when wallowing in the bath, he suddenly came up with the idea for how to measure the volume of an irregular object. He ran naked through the streets of Syracuse shouting 'Eureka!'. We don't know what the shocked citizens of Syracuse shouted back.

[3]*The Mathematician's Mind: The Psychology of Invention in the Mathematical Field*, J. Hadamard, Princeton University Press, 1945.

(Personally, we thought it was obvious that arithmetic transformations of indeterminate ternary quadratic forms are identical to those of non-Euclidian geometry, and are surprised Henri hadn't realised that straight away.)

The period of unconscious thought in which the brain is not focusing on the problem at hand is known as *incubation*, and it's often during this time that the solution pops up. You're in the gym sweating away on a machine thinking about how to keep from collapsing and embarrassing yourself in front of everyone when, WHAM!, from nowhere you come up with an idea for solving the problem you've been working on for days. You're so surprised that you fall off the machine and embarrass yourself anyway, but you don't care because you have the answer.

Matthew Warchus told Business Playground how he needs mental space when he's trying to solve problems creatively: 'I'm in a very strange position when I work with an assistant director. I find it quite difficult when I work with an assistant because I like collaborating – it's obviously my job to collaborate – but the only way I can work with assistants is if I tell them when they start with me, "Feel free to speak and comment, and things like that, follow me round, come to the meetings and all that. All I ask is that if I'm stuck don't help me. If things are going along really well then chip in, say what you want, but if I'm stuck don't say anything, because being stuck comes just before having a really brilliant idea." To me that's when having really special ideas come, just after being stuck. I think it's the magic moment creatively when you get a room full of people who are all stuck. I like that, it's a good sign.'

Creativity involves making connections between things that didn't previously appear to be connected. In 1913 Poincaré[4] wrote: 'To create consists of making new combinations of associative elements which are useful … the most fertile will often be those formed of elements drawn from domains which are far apart.' And recent research proves that being distracted from a creative challenge for a while can bear fruit (mainly plums, but mangoes too sometimes). In one study[5] undergraduates studying (or whatever students do) at the University of Amsterdam were each given a creative problem to solve, then they were either given three minutes to think it through before giving their answers, or given another task to do for the three minutes to distract them, or they were asked to come up with their ideas right away.

They had various creative tasks to perform: to create new names for pastas, having been given examples of some made-up names to help them (all of the examples happened to end with the letter 'i' – you'll see where this is going if you hang around a bit); come up with names of Dutch places starting with the letter 'A' (we can think of just one,[6] but the tests were conducted in the Netherlands so our guess is these people were better at it than us); to come up with ideas for some creative uses a brick (don't get us started).

Now remember that some of the students were distracted by another task before giving their answers. Those students randomly allocated to this *distracted group*, immediately having been given their creative task were given another, but this time a non-creative task, one designed to occupy their *conscious thoughts*. A circle appeared on their computer screens in a random place and they had to track it with their computer mouse and sometimes, we presume just to mess with their heads, the circle would change colour and they (who probably by now thought they were in some weird, Dutch drug-induced haze) had to click the space bar as fast as possible until the circle disappeared. Then a new one would appear, and so on for three minutes. The people in the other two groups seem to have got off relatively lightly, and either had to give answers straight off the bat for their creative tasks or were given three minutes to think up ideas first.

Results from the three experiments varied for the three groups. Ignoring the fact that we've just told you that the *distracted group* performed better, you might logically think that being give time to focus on the problem would help. But, oh no, that's not what happened at all. For instance, the distracted group generated more pasta names that did not end with an 'i' and their pasta names were more original than the those of the other group, who had created pasta names more similar to the ones given in the examples (that's where *that* was going). The distracted folks came up with more Dutch villages rather than the obvious big cities and towns when compared to their less-distracted brethren, and again the solutions they generated were less obvious. And, you guessed it, the distracted group generated more creative suggestions for what to do with a brick (such as, and we're guessing here, 'Throw it at the middle of the moving circle on the computer screen!').

How does one explain these results? As the Dutch researchers conclude, in way better English than most English-speaking natives would use, **'Whereas conscious thought stays firmly under the searchlight, unconscious thought ventures out to the dark and dusty nooks and crannies of the mind.'** The weird circle-tracking task had occupied their conscious thoughts, so freeing up their unconscious to do some nifty creative work. It's like letting a

[4] *The Foundations of Science*, H. Poincaré, The Science Press, 1913.

[5] 'Where Creativity Resides: The Generative Power of Unconscious Thought', A. Dijksterhuis and T. Meurs, *Consciousness and Cognition*, 2006.

[6] Alkmaar. Did you think we were going to say Amsterdam? Nah.

dog off the lead in a park. If you let the creative part of your brain go run around for a while (the dog), without being restricted by the more rigorous conscious thought (the lead), it will come back with lots of interesting ideas (in this analogy: sticks, balls and dead birds).

Monsieur Poincaré, our French mathematician friend, believed that the products of unconscious thought often do not enter the conscious mind right away, but pop up in there later unexpectedly. We've all experienced the feeling that there's *something there*, some interesting idea or solution that we can't quite put into words yet. In fact,[7] there's a two-step process going on. In the first, unconscious thought goes to work looking for creative solutions by exploring the dark and dusty nooks and crannies, and in the second, the solutions are transferred across to conscious thought.

The task often used in research on creativity is known as the Remote Association Test (RAT) because it tasks people with finding remote associations between things. This fits nicely with the Frenchman's description of creativity. In one form of RAT, for instance, people are given three words and they need to come up with a fourth that fits with each of them. Ready to try one? Cheese – Ocean – Sky.

Quickly … quickly …

The answer is *blue*. As in *blue cheese*, *blue ocean* and *blue sky*. Here are a few more to play around with. The answers are at the end of the chapter (see page 102), but the last few are pretty tricky so don't be surprised if you don't get them all.

Light – Birthday – Stick

Cross – Rain – Tie

Boot – Summer – Ground

Manners – Round – Tennis

Health – Taker – Less

Off – Trumpet – Atomic

Carpet – Alert – Ink

Test – Runner – Map

Man – Glue – Star

Here are the trickier ones …

Stick – Maker – Point

Foot – Collection – Out

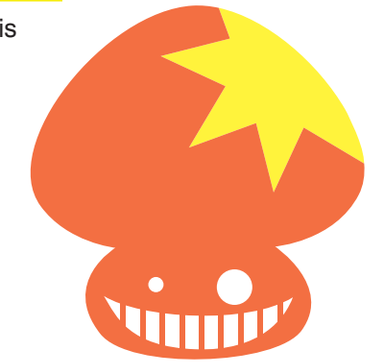
Line – Fruit – Drunk

Mate – Shoes – Total

Land – Hand – House

Bump – Throat – Sum

Problems like these can be solved in one of two ways: either by trial and error, an analytical process whereby we consciously go through word combinations to see if one of them fits (for the last one in the list you might have started with 'Off' to make 'Castoff' and tried it with the other two words before realising that wouldn't work), or solve the problem through insight. **There's an 'A-ha!' moment when the answer arrives from your subconscious. That's the creative bit at work.** And it's funny, but that 'A-ha!' feeling is how people almost always describe it (unless you're Greek, in which case 'Eureka' is the more usual cry). So when researchers want to find out if someone got the answer through analysis or insight, they ask them to say whether or not they got that 'A-ha!' feeling when they found the solution, and their answer tells the researchers which method of problem-solving was used.



[7] 'The Merits of Unconscious Thought in Creativity', Cheh-Bo Zhong, Ap Dijksterhuis and Adam Galinsky, *Psychological Science*, 2008.

It turns out that the brain actually *prepares* itself to come up with an insight when it's using the insight method even before it's solved the problem. It's limbering itself up to be creative. Researchers[8] put people in brain-scanning machines and used electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) to look at their neural activity during problem-solving tasks. Subjects were given RAT problems to solve and told to press a button when they had the answer that indicated whether they had solved it with or without insight. Did they get the 'A-ha!' feeling or not? Well, did they? If the problem was solved with insight then the brain activity looked different *even before* they came up with the answer. The brain was preparing itself for going down the 'A-ha' route.

But more than that, brain activity for the 'A-ha' method compared to the analytical one was different, not just before the problem was solved, but, wait for it, even *before the problem was given to them*. Even before they were given the problem, data from the scans showed that people's brains had decided which method to use – insight or analysis. The different people tested in the study didn't just use one or the other method to solve the problems, each person used both insight and analysis to solve the problems at different times and switched between the two methods. Perhaps they were trying a different approach to see which one was most effective, or maybe giving one part of their brain a rest.

Phew. I think you need a break to digest all this. Have a cuppa and then come back to us. We'll still be here.

[8]'The Prepared Mind: Neural Activity Prior to Problem Presentation Predicts Subsequent Solution by Sudden Insight', John Kounios, Jennifer L. Frymiare, Edward M. Bowden, Jessica I. Fleck, Karuna Subramaniam, Todd B. Parrish and Mark Jung-Beeman, *Psychological Science*, 2006.

I get tons of emails from people asking for some creative advice and, whenever possible, I give them free ideas to get their wheels turning. In the next few chapters are examples of some typical email exchanges.

20 August 2009

Evening Dave,

It was good to hear you speak at the Conference in Yorkshire and I recollect your offer for people to contact you. With this in mind I am wondering if you have any advice for a family bicycle shop who also hand-builds custom steel bicycle framesets on the premises? How do we keep our customers loyal, grow our customer base and keep customers coming into the shop rather than purchasing through the Internet? Any thoughts? My husband and I have owned the business since 2000, when the previous owner retired to Canada age 80, and the business was established in 1946 so seen lots of changes, and Paul, MD, has worked in the business around 18 years.

Many thanks.
Yours in cycling,
Sandra Corcoran, Director, Pennine Cycles

Dear Sandra,

I would suggest getting an old-fashioned Italian espresso or cappuccino machine, creating a coffee-club type atmosphere in a small area where people can hang around while they wait. Put a mini library all about cycling and adventure, old and new books, ask customers to swap cycling stories on your website and print them each week or put them on the wall in the coffee area. Customers stay loyal and keep coming back to a place that has personality and a feeling that the owners care and want them there, and it's good fun for you too. Give the different coffee names like 'Wheels on Fire', or 'First-gear Espresso'. Make it humourous. Create outings with the coffee-club clientele and take photos of the outings and place them on the web and in the finished coffee corner. Start a Twitter about cycling, coffee, music and romance. Make cycling and meeting people fun and it could lead to relationships that last.

Dave

Evening Dave,

Lovely ideas. Appreciate you getting back to me. We do hand-built sexy bikes as well as selling Italian sexy bicycles and we are passionate about cycling and our business so it all fits in nicely. One of our first bicycles was named 'Marilyn' after Marilyn Monroe in the 50s. We do offer coffee to our customers, we just need to make more space and get the cappuccino machine in operation now. Love the coffee titles!! Paul has lots of books on cycling so we need to set them up at the shop. Hand-built Pennine bicycles have a following worldwide too. A Pennine is on its way to California in September and a guy from near San Francisco is wanting to refurb a Pennine and needs some Pennine decals. It is a fun business to be in and my husband says it's the best job ever and I am sure you feel the same.

Happy days.

Yours in cycling,
Sandra

SWITCHING GEARS

OK, ready? So, to sum up, what going over these scientific studies has told us is this: first, when we have a creative problem to solve and we turn our minds to something else for a while, the distraction can actually *help* us solve it. Second, people often solve problems through sudden insight and get an 'A-ha' feeling when they do so. In fact, our brains can switch between using insight or the analytical method of problem solving and do so pretty frequently. Third, the brain spontaneously switches between methods, perhaps to give its various bits and pieces a rest.

So far, so good. Now, while people can generally switch from one mode to another to solve problems like these, certain people are predisposed to solve them through the insight method. They veer towards finding those 'A-has'. Using the same sort of techniques (i.e. RAT, EEG and fMRI, if you want the acronyms) scientists[9] looked at resting brain activity to see how it differed among people, and found that activity in certain parts of the right hemisphere of the brain is higher for people who tend to solve the problems using insight. That's interesting; it means that some folks use insight to solve creative problems more than others and their brains are getting into gear to do so ahead of time. Hmm.

So, are certain people more creative than others?

No doubt,[10] but as the research shows, all of us have the ability to switch into creative mode to solve problems, we just need to train our brains to think that way so it gets used to doing it. **As Louis Pasteur (man, these French thinkers were smart) said: 'Chance favours only the prepared mind.'** He believed preparation facilitates insight and, while he was specifically referring to the need to gather information (see the interview with Paul Allen in Chapter 3), we think it also applies to the preparation of our brains to think creatively. That's what we're going to look at next: what stimulates our brains to think more creatively.

[9]'The Origins of Insight in Resting-State Brain Activity', John Kounios, Jessica I. Fleck, Deborah L. Green, Lisa Payne, Jennifer L. Stevenson, Edward M. Bowden and Mark Jung-Beeman, *Neuropsychologia*, 2007.

[10]In fact, Einstein's brain was physically different from most other brains. When Einstein died his brain was dissected into 240 blocks, nearly all of which were lost (they should have sent them by registered post), though luckily not all of them were. One piece remained and, 30 years later, the chunk that's known as 'Brodmann's Area 39' was analysed by Dr Marian C. Diamond and colleagues who found that it contained a higher proportion of *glial* cells versus neurons when compared to brains of control subjects.

Hello Dave,

My company is a fairly small but fast-growing manufacturer of products that provide indoor air quality into homes. Basically, we are on a mission to improve the health and wellbeing of people by delivering fresh, filtered air into homes. According to the American College of Allergists, 50 per cent of the world's illnesses are attributed to poor indoor air, which causes respiratory illnesses, headaches, fatigue, cot deaths, and in some cases stress and depression. And the problem is getting worse as we seal our properties up to save energy. The air we deliver into homes is as fresh and clean as the air found in the Amazon Rainforest (you will never see a monkey using an inhaler*). This fresh filtered air we deliver promotes good health and wellbeing, reduces illnesses and actually improves performance. There is a huge worldwide potential for our products in what is basically an untapped market and after seeing you at Harrogate last month I thought I would have nothing to lose in emailing you. I was wondering if you were prepared to talk to me to see if we can tap into your creativity and come up with a message to the mass

market which will create a demand for fresh, clean, oxygenated air. It would be great to hear from you with any thoughts.

Nick Heaton
Managing Director, EnviroVent

* Our products literally are tested on animals!

Dear Nick,

'EnviroVent' is quite a tough name to sell yet I can see that the business could be huge. Selling the idea of breathing clean air and avoiding various illnesses should not be tough and if you can scale up fast enough to meet demand then it may be worth investing in a visual way that gets across your message using every viral trick in the book and the web as a platform. Make an electronic email-able Flash version of a short film of around 60 seconds that tells the story (have a song like 'All You Need is the Air That You Breathe' as the soundtrack) and make it a little like an animated film you see on Virgin Airlines about safety on board (even though it's serious, it has some lighthearted humourous aspect to it). There are young Flash animators that can do this with your guidance on their laptop very cheaply and to save $$$ you could write a simple song about 'fresh clean air' and hire a music programmer to create a track and get a session singer to sing it, and then you own it! If you can afford it you could make little 60-second webisodes with Flash animation that explains all the reasons to use your product, having the song as a thread through it. If it's fun and informational and at the end says 'brought to you by EnviroVent' then it can be seeded on blogs, etc., all over the world. Also start Twittering asap about the air we breathe and all the concerns about it with hundreds of tags.

Dave

TUNING UP TO BE CREATIVE ... MUSIC PLEASE, MAESTRO

You're not going to be particularly surprised by this, especially given that one of the authors of this book is a musician and the other likes to whistle, but there is a strong link between musical ability and creative ability. But don't just take our word for it. In a recent study,[11] 20 percussion, wind and string players were given creativity tasks to perform while their brains were scanned. They were asked to come up with creative uses for household objects and, compared to a control group of non-musicians, on average came up with 14 more. Scans of their brain showed that, when working on the creative

[11]'Enhanced Divergent Thinking and Creativity in Musicians: A behavioral and near-infrared spectroscopy study', C. Gibson, B. S. Folley and S. Park, *Brain and Cognition*, 2008.

tasks, the musicians showed more symmetrical blood flow between their brain hemispheres than the non-musicians did. They used both halves of their noggins pretty well.

When musicians create *original* music they use different parts of their brains compared to when performing music they already know. For example,[12] research has shown that jazz musicians, when improvising jazz, use different parts of their brains as opposed to when playing jazz from memory. These performances didn't take place in a cool jazz dive; however, the highly-trained musicians were on their backs, knees bent up, heads inside fMRI brain scanners and playing the keyboards only with their right hands. Now there's a novel act. Results showed that during improvisation the large portion of the brain responsible for monitoring one's own performance (the *dorsolateral prefrontal cortex*) completely shuts down. 'The researchers explain that, just as over-thinking a jump shot can cause a basketball player to fall out of the zone and perform poorly, the suppression of inhibitory, self-monitoring brain mechanisms helps to promote the free flow of novel ideas and impulses.'[13] The brain pattern is similar to that seen in people when they are dreaming.

Yet you don't have to be an accomplished musician to experience the positive effect music can have on creative performance. Just listening to certain types of music enhances creativity. Try Joan Ambrosio Dalza's *Piva*, for instance, the fourth movement of George Frederic Handel's *Music for the Royal Fireworks*, or the final movement of Joseph Haydn's *The Creation*. At one ad agency we know, when driving to big presentations at their client's offices the agency team would crank up Richard Wagner's *Flight of the Valkyries* to get themselves ready.[14] Music is processed in both sides of the brain and it is thought to coordinate right-brain imagery with left-brain analysis so as to help solve problems more creatively (try Erich Wolfgang Korngold's *Violin Concerto*, first movement).[15]

Music is one of the few things in the world that breaks through language barriers, and being a musician you learn how to connect with somebody emotionally by choosing particular chords or a particular melody. You can use music in business meetings or take a ten-minute break to listen to a piece of music and it will actually tune everybody together. Before that everyone might have been thinking about a million things – 'I need to put on the washing' or 'I forgot to phone my dog' – but you put on a piece of classical music, ABBA, or whatever music you like, and suddenly everybody's on the same plane. It puts everyone on the same wavelength momentarily. When played a piece of classical music, anthropologists have found that African villagers, who have never heard anything like it before, all describe similar emotions when they hear it. In a powerful scene in the film *The Shawshank Redemption*, wrongly convicted prisoner Andy (played by Tim Robbins) finds a recording of Mozart's *Marriage of Figaro*. Knowing how much trouble he'll get into, but doing it anyway, he barricades himself in the warden's office and plays this beautiful music, an aria called *Che Soave Zeffiretto*, or *What a Gentle Breeze*, over the

[12]'Neural Substrates of Spontaneous Musical Performance: An fMRI Study of Jazz Improvisation', Charles J. Limb and Allen A. Braun in *PLoS ONE*, 27 February 2008. It was funded by the National Institute on Deafness and Other Communication Disorders (NIDCD).

[13]'Large Portion of Brain Switches Off and Lets Creativity Flow in Jazz Improvisations', from **www.terradaily.com**, 27 February 2008.

[14]This is the same music that Lt Colonel Gilgore, the air cavalry commander played by Robert Duvall in the film *Apocalypse Now*, blasts out from his helicopter as he lays waste to a North Vietnamese village. 'I love the smell of Napalm in the morning,' he famously says in another scene.

[15]In 1993 a group of researchers at the University of Wisconsin discovered that when college students listened to ten minutes of a sonata by Mozart, their performance in an IQ test rose by 8–10 points. What became known as the 'Mozart Effect' spawned a whole industry of music CDs and DVDs for parents to play to their toddlers and even unborn infants to boost their IQs. The test done on the college students was actually a spatial task, one that required them to manipulate objects in their minds, not specifically an IQ test, which suggests that while intelligence might not actually be enhanced by listening to music, spatial reasoning, a key part of creativity, might.

prison PA system. It transfixes every hardened inmate and prison guard. They stand frozen, staring up at the speakers as they are momentarily transported to another, better place.[16] Check out our website for music to download (**www.businessplayground.com**).

Dr Adam Anderson of the University of Toronto wanted to see how listening to music impacts people's mood and creative ability.[17] To create a positive or negative mood people listened to happy or sad music and were asked to think about happy or sad things. When in a happy mood they did well on the creative tasks, but not so well on other tasks. 'If you are doing something that requires you to be creative or in a think tank, you want to be in a place with good mood,' says Dr Anderson.[18] 'For example if you are having difficulty solving a problem, a typical reaction is to get angry. But that can actually make it harder to solve the problem. One prescription is to go out and play and get yourself in a good mood, then come back to the problem.'

It's thought that a part of the brain called the *amygdala* might be responsible. **The amygdala triggers fear and that shuts down the part of the brain that makes us creative, but when we're happy the amygdala is oh so quiet[19]… shhhh.**

[16]No, not Starbucks.

[17]'Happy Mood Improves Creative Thinking but May Lead to Distraction', Adam Anderson, *Proceedings of the National Academy of Sciences*, December 2006.

[18]'Happy Emotions Boost Creativity', *ABC News*, 19 December 2006.

[19]We love Björk.

But, being in a good mood actually has a negative impact on some other types of mental tasks. Says the good doctor, 'If you are doing some form of task that requires focus and many details of calculation, strangely, it might be better to be in a negative mood because the negative mood can filter out everything else.' Negative moods help people focus. 'Under a negative mood,' he says, 'we see the world through a porthole. But under a positive mood, we see the world through a big window.' Another study found that physicians in a positive mood solve problems more creatively than those in a neutral mood.[20] Positive emotions inhibit logical reasoning and make it difficult to detect strong versus weak arguments. So, depending on the problem you want solving, choose your accountant and physician very carefully.

And, don't tell the kids, but playing certain video games can produce emotions that give a creative boost. As part of her graduate thesis, Elizabeth Hutton and a professor S. Shyam Sundar of Penn State University got 98 students to play the videogame *Dance Dance Revolution* to see if it would affect players' problem-solving abilities. If you've never watched this game being played, it's quite a spectacle – players stand on a platform with flashing arrows arranged in a cross shape, and dance to the music by moving their feet quickly on to each arrow as it lights up. The researchers found[21] that players with a high degree of arousal and positive mood were more likely to have new ideas for problem solving. But creativity scores were the highest for players with low arousal and negative mood. Happy *or* sad people are creative, while angry or relaxed people are not. 'The key is to generate emotion,' they concluded.

[20]'Positive Affect Influences Creative Problem Solving and Reported Source of Practice Satisfaction in Physicians', C. Estrada, A. M. Isen and M. J. Young, *Organizational Behavior and Human Decision Processes*, 1994.

[21]'Video Games Can Make Us Creative If Spark Is Right', *Science Daily*, 5 May 2008.

Doing some form of aerobic exercise can also make us more creative. A 2005 study[22] looked at how doing aerobic exercise would affect people's creative performance compared to not doing any. And, guess what, the couch potatoes lost. Some people were randomly picked to do the creative tasks immediately following 30 minutes of running, fast walking, swimming, cycling on a stationary bike or stair climbing. Another group was politely asked to do exercise for 30 minutes and then given a two-hour break with their feet up before doing the tasks, while a third group did the creative task after having done no exercise that day, the slobs. The results showed that, 'Instances of aerobic exercise significantly impacted the creative processes of the participants, and these effects were shown to endure over a two-hour period.' Why this happens is likely to be to do with blood flowing through the brain: the increased blood flow delivering nutrients in the form of glucose, and perhaps the endorphins released by the increased oxygen in the bloodstream making new neural connections in the brain.

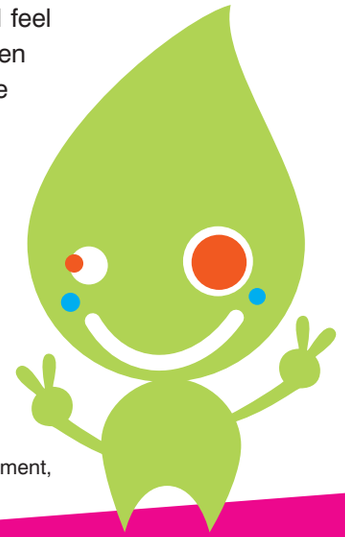
Music, video games and aerobic exercise all affect mood and in turn creative performance. In most office environments doing any of these activities might be frowned upon – having a colleague do aerobics while you're on a conference call might be a little off-putting – but the point is, when we're in creative mode we often need to do something else other than stare at the computer screen waiting for inspiration. **We need to give our brain a rest, or lift our mood, or get the blood flowing, and so taking a break for a while is well worth it. And now you've got the scientific evidence to prove that, while it might not look like you're working hard, you really are!**

[22]'Aerobic Exercise and Cognitive Creativity: Immediate and Residual Effects', D. M. Blanchette, S. P. Ramocki, J. N. O'del and M. S. Casey, *Creativity Research Journal*, 2005.

THERE'S A HOLE IN MY HEAD

On the subject of how increasing the blood flow to the brain through exercise or video gaming increases creativity, some people believe that drilling a hole in their head will increase blood flow and so have the same effect. We're not recommending this, by the way, just mentioning it in passing. This is called *trepanation* and involves making a small hole in the skull to decrease the pressure on the brain to increase the volume of blood flowing through it. **Trepanning is an ancient surgical practice and a trepanned skull was recently found in France that is believed to be 7,000 years old.** Not surprisingly, though, there aren't many people nowadays that practise it, one reason maybe being that if you practise it and don't do such a great job you'll probably wind up dead.

One person who has tried and lived to tell the tale is Peter Halvorson. In a 1998 interview[23] he described how, 26 years previously in a small room in Holland, he used an injection of anaesthetic, a scalpel, four drill bits and an electric power drill controlled by his foot to make the hole. 'I could hear a gurgling, and I could feel the shifting of volume in the brain water,' says Halvorson when describing the moment he broke through the skull. 'There was a warm feeling as my metabolism cranked up a bit.' He did the trepanation for enlightenment – we might suggest a good book instead, but, oh well – and according to Pete the result of the procedure was more energy, more drive and more focus, and it returned him to the 'buoyancy' he had as a child.



[23]'You Need It … Like a Hole in the Head. If You're Looking for Enlightenment, Here's the Drill', Michael Colton, *Washington Post*, 31 May 1998.

The man responsible for a modern-day resurgence of popular interest (we admit *resurgence* may be overstating it somewhat) in trepanation is a Dutch librarian called Bart Hughes, who in the 1960s had trepanned himself and lived to tell the tale in his book, *Trepanation: The Cure for Psychosis*. **According to Hughes, gravity and age rob adults of the creativity and energy that a child possesses.** While a baby's skull has a *fontanel* – the soft spot – that allows the brain to pulsate, by adulthood the skull has hardened and so the brain can no longer pulsate as it did and that, together with good old gravity, saps more blood from the head. Trepanation, Hughes believes, reverses this loss of blood volume and gives you the feeling you get from standing on your head for a few minutes, or from sustained aerobic activity. You know, a bit of a head rush.

Another recent trepanner was Oxford University professor Lord James Neidpath, who taught Bill Clinton when the ex-US President was a Rhodes scholar at Oxford. The prof. had decided to do it because his wife had already tried it and spoke very highly of the results. And, according to Paul McCartney in a 1986 interview with the magazine *Q*, John Lennon was also interested in the idea. John asked Paul and wife Linda if, 'You fancy getting the trepanning done?'[24] They never did. You can learn more at **www.trepan.com**, the website for the International Trepanation Advocacy Group (ITAG). Drills are available at most good DIY shops, bandages at your high-street chemist ...

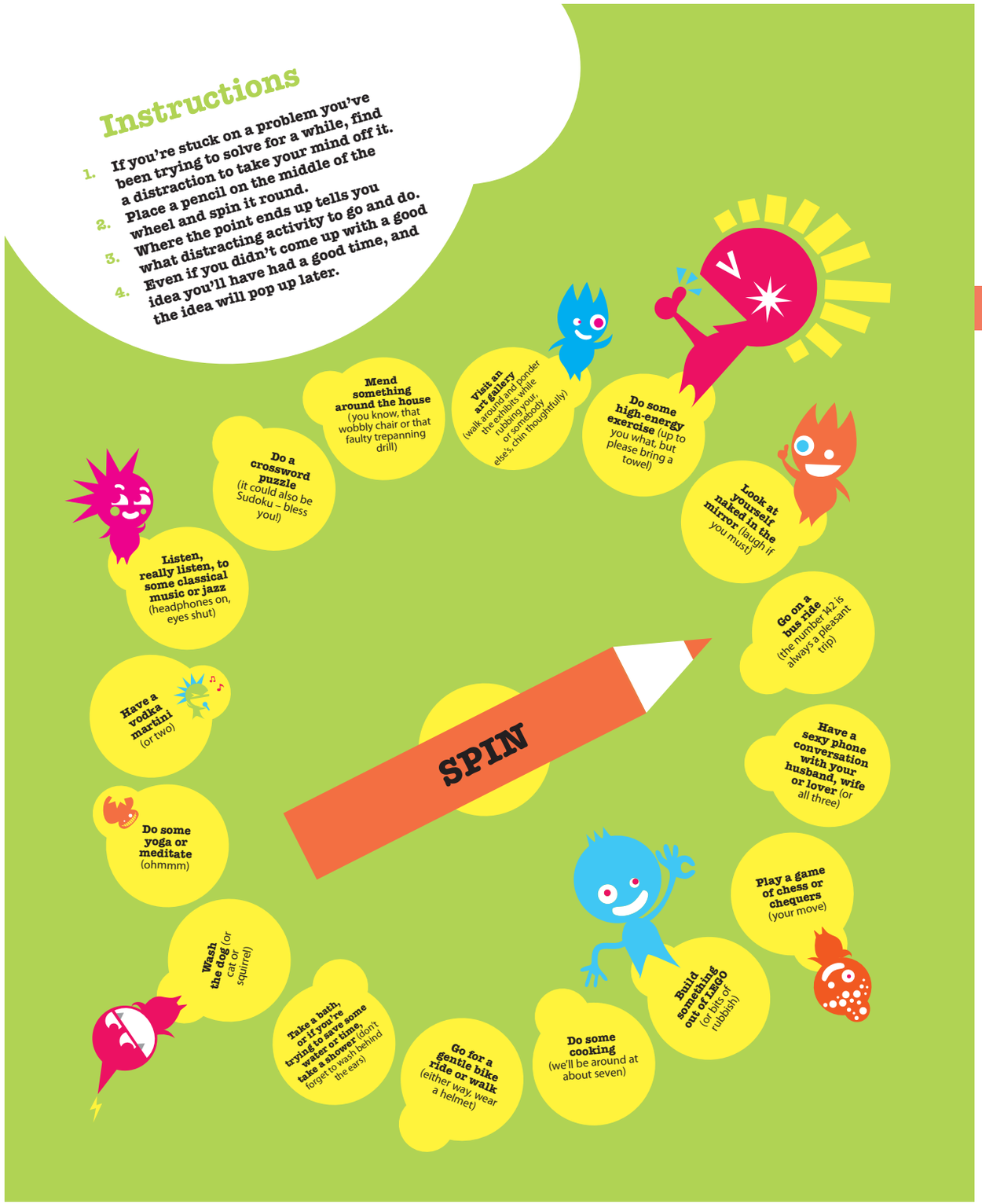
[24]'An Innocent Man?', Chris Salewicz, *Q*, October 1986.

MOVE ONE SPACE FORWARD TO THE NEXT CHAPTER ... OR ROLL THE DICE

So, creativity involves thinking more broadly than the more sensible, analytical parts of our brains allow us to do. Making time for distractions that keep our minds off the problems we are trying to solve creatively can make the solutions better than they would otherwise have been, and in business that means going off to do something else for a while. All people tend to switch between different methods of problem solving: the ones that use analysis and the other insight that leads to an 'A-ha!' moment – they sometimes subconsciously decide which method to use even before they know what problem they are going to solve – but some people use insight more than others. **It's likely that some people are in fact more creative than other people, but we all have the ability to think creatively and certain activities can bring out that ability.** Musicians, for instance, tend to think creatively, but just listening to music also has a positive effect on creativity, as does playing video games or aerobic activity, by putting us in a positive mood or increasing blood flow to the brain. The downside of being in a positive mood is that it can make us less effective at making logical decisions. In the next few chapters we introduce fun techniques for coming up with ideas, all of which tap into the side of our brains that does the diverse thinking. You'll be pleased to know that hardly any of them involve the need for sharp instruments.

Instructions

1. If you're stuck on a problem you've been trying to solve for a while, find a distraction to take your mind off it.
2. Place a pencil on the middle of the wheel and spin it round.
3. Where the point ends up tells you what distracting activity to go and do.
4. Even if you didn't come up with a good idea you'll have had a good time, and the idea will pop up later.



BOARD GAME: WHEEL OF DISTRACTION

How it works: When we have a clear creative challenge, and after spending some time thinking through a problem, the brain often needs a rest from concentrated thought so it can wander and make less obvious connections. But more than just giving it a rest, if we task the brain with something distracting we actually help it solve the creative challenge we set out by allowing it to do its work unencumbered by stumbling blocks like logic and analysis.

How to play: Players spend some time framing the creative problem they're trying to solve and then they do something absorbing and totally unrelated to the problem by randomly picking a distraction from the wheel. Choose one by spinning a pencil on the centre of the wheel and seeing where the pointy bit ends up.

ANSWERS TO QUESTIONS ON P. 84

Light – Birthday – Stick	*(answer: Candle)*
Cross – Rain – Tie	*(answer: Bow)*
Boot – Summer – Ground	*(answer: Camp)*
Manners – Round – Tennis	*(answer: Table)*
Health – Taker – Less	*(answer: Care)*
Off – Trumpet – Atomic	*(answer: Blast)*
Carpet – Alert – Ink	*(answer: Red)*
Test – Runner – Map	*(answer: Road)*
Man – Glue – Star	*(answer: Super)*

Stick – Maker – Point	*(answer: Match)*
Foot – Collection – Out	*(answer: Stamp)*
Line – Fruit – Drunk	*(answer: Punch)*
Mate – Shoes – Total	*(answer: Running)*
Land – Hand – House	*(answer: Farm)*
Bump – Throat – Sum	*(answer: Lump)*