



THE HUMAN FACTOR

CREATIVITY

Ping pong tables, pod chairs, beach huts for meetings and giant slides — is this really what it takes to breed creativity in the workplace?

WORDS BY LIZ HOLLIS

Creativity has never been more popular. Chief executives believe it is the most important leadership quality for success in business, in a recent IBM study, ranking it higher than global thinking and integrity. Companies are redesigning their offices and revamping their corporate cultures, all in the name of encourage creatives to do their best work.

"Not all industries require creative people but some will surely fold without them," says occupational psychologist Dr Mike Rugg-Gunn. "For these industries, creativity is a strategic imperative. The better we understand what makes people more creative, the better companies can shape an effective creative culture."

And yet the more that business tries to lure "star talent" or nurture creativity, the more slippery the concept becomes. Employer tactics such as attractive salaries or quirky workspaces might even stifle imagination rather than encourage it. Scientists are now applying a systematic approach to understanding

the components of creativity — drawing on advances in psychology and neurobiology to unpick what was once considered an elusive preserve of artistic genius. Will it ever be possible to find a formula to develop and nurture the creative mind?

Death of the genius

The "creative mind" is itself a problematic concept. The lone genius has been a seductive idea for centuries, and the earliest attempts to subject creativity to scientific inquiry started from the assumption that such people have a pattern of innate personality traits. Founded in 1949, the Institute of Personality and Research (IPAR) at the University of California invited some of the world's most renowned creative people, from author Truman Capote to architect Eero Saarinen, for analysis. Its researchers noted recurring characteristics, from non-conformism to rating their ideas above other people's

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“Paying above market value is not necessarily going to hire you the best creatives” *Dr Terry Dockery, business psychologist*

and preferring complexity and ambiguity over simplicity and order.

Once you’ve defined what makes a creative, it’s just a matter of attracting these people to work for you, right? Unfortunately, this rarely works.

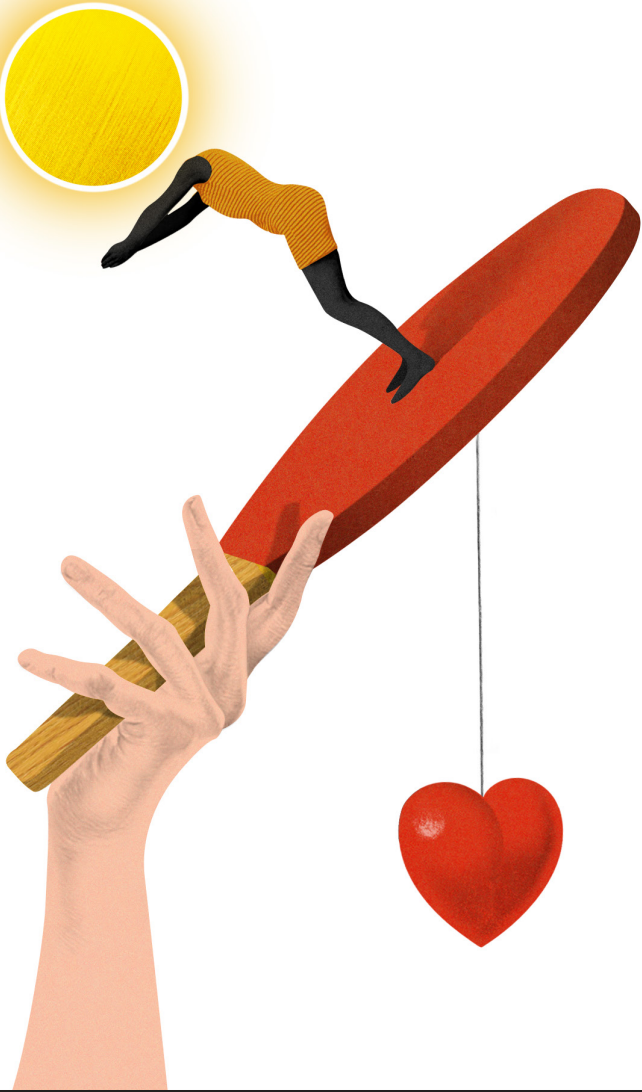
“Superstars” from one company often fail at another, as Wired journalist Bryan Gardiner recently noted, citing the example of Ron Johnson, the creator of Apple’s Genius Bar who lasted just 17 months as chief executive of JC Penney.

“Star talent is partly innate, sure,” Gardiner writes, “but it’s also linked to specific teams or projects or just the culture of the company.”

Psychologist Dr Stephanie Taylor agrees that we need to think beyond the notion of the special talent who will produce the goods on demand. Favourable circumstances and social

interaction are just as important. “People work with other people, although it’s not always acknowledged,” Taylor says. “Quite a lot of the most famous photographs that were credited with changing the fashion industry were actually created by the stylist. The output of one person — the photographer — is the product of a number of people contributing.”

The misapplication of science has also encouraged a misguided distinction between creative and non-creative personalities. Traditionally, we’ve categorized people into either “right-brained” creative thinkers or “left-brained” logical, rational types. There are shelves full of popular self-help books to enable people to increase their creativity by tapping into their right brain. But as cognitive neuroscience uses brain

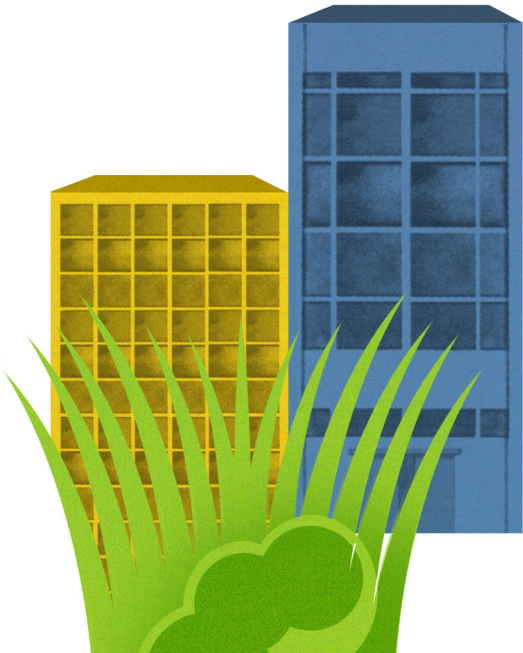


imaging to reveal what actually happens when we undertake creative tasks, it’s turning out to be a lot more complicated.

Scientists at the University of Utah scanned the brains of more than a thousand people and found that they did not tend to have a stronger left or right-sided brain. Creativity doesn’t reside in a single side or part of the brain but fires in different regions depending on what stage of the creative process you’re at and what you are actually doing. If you are brainstorming for a new marketing slogan, for example, that might activate the Broca and Wernicke areas, responsible for language. But attempting to visually rotate a physical object in your mind’s eye, such as working out how to fit moving parts of a new product together, might activate the Dorsal attention/visuospatial networks.

Finance is control

There’s another reason why hiring creativity often fails. Businesses may be able to lure talent with an attractive salary package, but there is no inherent link between money and innovative thinking. “Paying above market value is not necessarily going to hire you the best creatives,” says business psychologist Dr Terry Dockery. “Creative people obviously work for money, but they need more than a cash reward to motivate them to come up with more ideas.”



HOW DO YOU WORK?

Jean-Paul Viguier / architect / Jean-Paul Viguier et Associés / Paris

“To me, creativity very much relates to movement, to action. Creative people start by making up their mind to do something, but then they have to test it in a real situation. This is particularly true of architects — if I just design projects and have theories about architecture, I do not accomplish my work completely. You have to build the projects that you have imagined.

But I have a friend who is a psychiatrist who says that the time you are most creative is when you do nothing – if you take a picture of the brain, that’s when it is most active. It’s a very interesting paradox. When I am seated in an airport doing nothing and waiting for the next plane, I’m very creative, because I’m in a stimulating environment and my brain is running at high speed.

Sometimes I’m looking for contact and movement, and sometimes I want to be by myself. It takes a little bit of training to be able to put yourself outside of your environment – I can be in a crowd with a lot of noise and a lot of people and I don’t hear the noise and I don’t see the people.

Another word that is very important to me is “synergetic”. I try to put things together. Here in France, the education system separates the disciplines, so people don’t talk to each other, particularly at university. That’s why I decided to study for a masters in city planning at Harvard. The electrical engineering department was just next door so architects and engineers were all talking with each other. I love this type of unexpected encounter and the fact that you learn from others’ points of view.

My office is an old industrial building, and it illustrates this idea of the unexpected very well — it was a factory making welded furniture for hospitals. We have transformed it into a space that is very free and open, and replaced the roof with a steel and glass box. It’s not a flat environment, there is stimulation all the



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time from the view, the air, the hot or cold, the garden on the terrace. In the past, spaces were designed to be very specific to what they were used for, but they are becoming much closer to each other. We are designing offices that you could live in — the couches and materials are the same as you have at home — and the reverse is true of our homes.

What prevents me from being creative? Stress – I think it is very inhibiting. This is something I have realised about myself, and I try to apply it to my projects too. For instance, when you go into hospital as a patient, you feel a tremendous amount of stress and I think that the way we design hospitals can help to relieve this — the shape of the building, the quality of the light, the materials, the ambience of different spaces, the fact that you can welcome your family when they visit. I applied this theory on a hospital in the

south of France at Castres-Mazamet, and then on a cancer research institute in Toulouse, and it worked very well. At the beginning, the doctors were very sceptical but they noticed that the patients are more relaxed and more prepared for treatment. It has even facilitated healing to a certain extent.

I try to select projects that push you to be creative. I think that creative architecture is when you add something to the commission, and you answer a question that has not been asked by your client. That’s what makes architecture interesting and it is also what makes architecture an art, because a piece of art is something that you do not reproduce. It is a unique answer to a question. A client has an idea of what he wants, but what you propose and how the project ends up is unexpected. That’s why architecture is so exciting.”

FIVE WAYS TO BOOST CREATIVITY *

(* that might actually work)

1	2	3	4	5
Free pottery or language classes	Distant thinking	Brainwriting	Get closer	Stimulating objects
Creativity flourishes when workers move outside their comfort zone, broaden their knowledge and do something they’ve never do before, according to research from the University of California. This makes for more diverse knowledge which creates new neural connections as well as boosting conversation and interaction.	A study from Indiana University showed that increasing psychological distance makes things seem more abstract and increases creativity. The next time you’re stuck for insight, project the problem further into a remote future or a faraway place — for example asking ‘how would we solve this if I was happening 2,000 miles away or 100 years ahead’. This makes it seem less likely and makes you come up with more insight.	Studies show that we overestimate the success of group brainstorming as members often fail to contribute for fear of appearing stupid. Instead, write ideas on paper and pass to others in the group who then add their own ideas to the list.	Data from Sociometric Solutions, a US-based company that analyses communication patterns in the workplace, found that we need to sit near others to interact. Research by Dr Christian Catalini from the Massachusetts Institute of Technology found co-location increases the likelihood of serendipitous collaboration by a multiple of 3.5.	A study into Harnessing Creativity and Innovation in the Workplace from Cornell University found that workplace creativity needs objects such as journals, art and other items that are not directly related to the business, as well as a range of traditional and non-traditional communication tools, from white boards to coloured crayons.

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Jeremy Myerson, Royal College of Art, London

organize their own space and collaborate better when they are sitting within 18 metres of one another,” says Kursty Groves, author of Spaces for Innovation: The Design and Science of Inspiring Environments. “Creatives perform better if they can rearrange the chairs, choose the colours or change the height of the tables, for example.” Psychology experiments from the University of Exeter seem to confirm this, finding workers are more productive intellectually when they are empowered to design their own workspace rather than having predetermined space configurations thrust on them.

Daydreaming and learning to fail

While Myerson may be right that objects such as ping pong tables are often “whimsy for whimsy’s sake”, distraction does serve a purpose. Engineer-turned-innovation-consultant Anne Miller, author of How to Get Your Ideas Adopted, says that daydreaming is an essential ingredient of creativity. The “hypnagogic state”, similar to that experienced just before sleep, is a haven for incubating solutions and new ideas. “The creative process needs alternating periods of focus and quieter, daydreaming reflection,” Miller says.

Of course, there is a delicate line between creative daydreaming and time-wasting — and this perhaps cuts to the heart of what defines a truly creative culture. For creatives to do their best work and for companies to allow them to do it requires a culture of mutual trust. This means people are able to try things out without fearing the repercussions if they mess up, points out Dr Terry Dockery. “Not everything is a home run and failure is an essential part of the creative process,” he says. “Creativity requires a corporate mind-set that replaces dread of failure with the delight of exploration and experimentation.”

That’s all very well, but what is a manager to do if their team is highly innovative but messes up so often they cannot function commercially? Dockery says that while there has to be space for failure, it still has to be within reasonable parameters. Workers must be able to tell their CEO honestly what is working and what isn’t — and that CEO needs to care about the goals, career paths and work-life balance of their employees. It’s not necessarily a new idea, but then perhaps creative thinking isn’t always the answer ...

psychological research that implies a more complex relationship between money and creativity. A recent study published in the journal of Creativity and Innovation Management suggests that while extrinsic financial rewards might not help creatives come up with ideas, the prospect of being rewarded may help them persevere to fully develop them and focus on the finer details of an innovation.

The pursuit of happiness

While money might not be integral to creativity, happiness almost certainly is — again, undermining many lone-genius myths. Sadness and neutral moods inhibit creative ideas compared to a playful, upbeat mood, according to a study by Dr Karen Gasper at Penn State University — perhaps because a lower mood makes us more likely to judge our ideas negatively. So how — apart from giving them creative tasks to do — do you make creative people happy?

The answer for an increasing number of companies is the “fun” workspace, which acts as both an inspiration for, and a physical manifestation of, a deeper creative corporate culture. One such company is software giant Autodesk — ranked by Fortune as one of the world’s great places to work.

“It starts with a really relaxed work environment,” says vice-president of learning and development Ian Mitchell. “A place that doesn’t look like an office — and indeed our office is nothing like any other you would find in Farnborough, where our UK base is,” he says. “Whether it’s the table-tennis table, the FIFA machine, the bright imagery, the pod chairs, the hammocks — it’s a very different workspace.”

A study in the Creativity Research Journal found that surrounding employees with interesting and unusual things, people, games and activities

stimulates new thinking better than a dull environment. This is the theory underpinning the fad for more playful office décor among West Coast creative tech companies like Google and Apple, with their beach-hut meeting pods and giant slides.

But some are sceptical. Jeremy Myerson, professor of design at the Royal College of Art in London and the author of several books on the 21st-century workspace, believes that introducing novelty into the workplace can go badly wrong. “The Google effect has promoted the idea that work is somehow a playground, and this can infantilize your staff,” he says. While it may have worked for the likes of Google, the ensuing trend has had a detrimental effect on workplace efficiency in companies with a different culture, with workers simply playing on the ping pong table instead of working.

Perhaps more important than a physical manifestation of creativity is the need for workers to take ownership of their workspace and not have changes imposed from above. “Workers think more creatively when they are allowed to

A meta-analysis of 128 studies led by Edward Deci, a psychology professor at the University of Rochester and one of the originators of “Self-Determination Theory”, found that incentives or rewards of any kind — whether praise or cash prizes — reduced intrinsic motivation, the internally focused driver that produces creative ideas. There are, of course, individual differences in people’s relationship with money, but the analysis showed that the more enjoyable the task — which creative work tends to be — the stronger the effect. Every standard deviation increase in reward for interesting tasks decreased motivation by about 25%. Worse still, knowing in advance exactly how much extra money would be received decreased intrinsic motivation by 36%.

Instead, employees get creative when they think their ideas matter and that

the organisation is striving to achieve something that has greater meaning. Rugg-Gunn, author of board briefing-paper Defining Creativity and How to Develop a Creative Culture, says that tasks need to be defined in “broad and substantive ways rather than just financial ones”. This is because finance is about control: “Control is anathema to the creative process. It’s also external motivation, whereas being creative is usually powered by intrinsic motivation.”

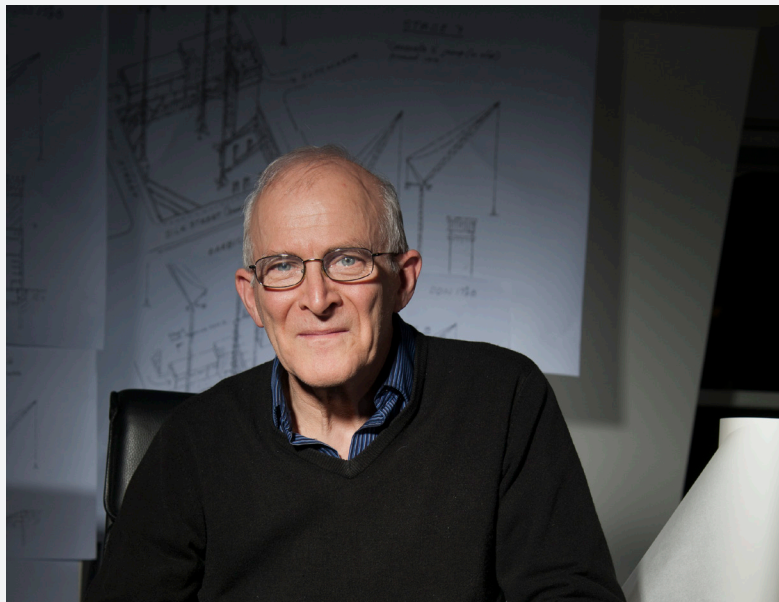
This doesn’t necessarily mean that top personnel will perform on the minimum wage, however. There is a strand of

*“Control is anathema to the creative process . . .
Being creative is usually powered by intrinsic motivation”*

Dr Mike Rugg-Gunn

HOW DO YOU WORK?

Ron Slade / structural engineer / WSP / London



Engineers enjoy problem solving and that’s when we are at our most creative. Problem solving takes time — quality time, unhindered by people or outside events or the telephone. That said, to develop ideas, I think you do need to be under some degree of pressure and to feel the tension of everyday life. If I’ve got a problem to solve and I come in early to deal with it, I’m still under pressure but I can grab some quality time because the phone isn’t ringing. These days, not many people are given that luxury. We work in a frenetic society — everything is speeded up by computers and communications. I’m sure we work more intensely now than we ever did, but we should still hold on to the concept of quality time.

There are some aspects of creativity and problem solving that are peculiar to a particular field. For instance, in basic structural engineering, there is

rarely any situation where something is brand new — ways of defying gravity have nearly always been investigated by our predecessors. But we have to be able to think creatively in order to explore various options. In construction, it’s important to understand how things are put together, and that knowledge assists the quest for solutions. Everyone uses the expression “thinking laterally” but in structural engineering, thinking diagonally and moving away from orthogonal arrangements to something less regular often provides an answer. For instance, we use walking columns, or flag columns, to change load paths.

Thinking on paper helps, drawing in order to understand helps, and I am a firm believer that sleeping on a problem helps. It helps when things are reasonably quiet — it’s very difficult to think creatively if you’re on site and it’s raining hard and the plan you’ve got in your hands is getting wet ...”

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