# Brain science

Insights from brain science can help manage projects and influence change, says CAROLE OSTERWEIL

**There's a 'catch-22' in project delivery. Research led by Professor** Terry Williams into early warning signs for complex projects concluded that formal project review processes are ineffective until we can pick up on subtle dynamics like groupthink, political pressure and inconsistent decision-making, alongside progress, risk and finance. The main challenge to improving delivery is in our heads, and too many of us are blind to the human and organisational dynamics.

These findings present the project management community with a challenge. If we can't readily see these dynamics playing out, how do we know they are real and how do we seek to influence them?

Ten years ago, you could be forgiven for labelling talk of invisible human and organisational dynamics as 'flaky'. Not so now. Neuroscience may be in its infancy, but it's already providing insights into how the human brain works that have profound implications for project and programme management.

How does how the brain work, and how do these invisible dynamics arise?

## THE THREE-PART BRAIN

The brain is made up of three parts, which are often referred to as the primitive brain, the feeling brain and the thinking brain – see page 61.

The primitive brain is focused on survival by ensuring that body processes such as breathing and heart function are maintained. The feeling brain acts as our emotional command centre – it's where aspects of memory reside and impulsive actions begin. The higher brain functions such as analysis, creativity, logical decision-making and empathy originate in the thinking brain.

We are conscious of activity taking place in the thinking brain, only partly conscious of activity in the feeling brain and unconscious of activity in the primitive brain.

**WE ARE CONSCIOUS OF ACTIVITY TAKING PLACE IN THE THINKING BRAIN, ONLY PARTLY CONSCIOUS OF ACTIVITY IN THE FEELING BRAIN AND UNCONSCIOUS OF ACTIVITY IN THE PRIMITIVE BRAIN**

The three parts of the brain are intimately connected and linked to the body. Together they operate as an integrated system. Acting in consort, their primary concern is to ensure our survival. To achieve this, the amygdala, which sits in our limbic brain, is constantly scanning the environment to identify things, people and situations to avoid (threats) and those it is safe to approach.

We've evolved as social creatures and we face very different threats to our hunter-gatherer ancestors. In the 21st century, we are constantly on the lookout for perceived threats to our psychological safety.

As an integrated system, the brain needs to make best use of available energy resources. The feeling brain – which acts largely on autopilot – is far more energy efficient than the thinking brain. You're probably familiar with the idea that, when learning new things, such as how to drive, we go from unconscious to conscious incompetence and then to conscious competence and unconscious competence.

As we assimilate the knowledge and skills to drive, mental activity moves from the thinking brain, where it requires a lot of energy and effort, to the limbic and then the primitive brain – where it is instinctive.

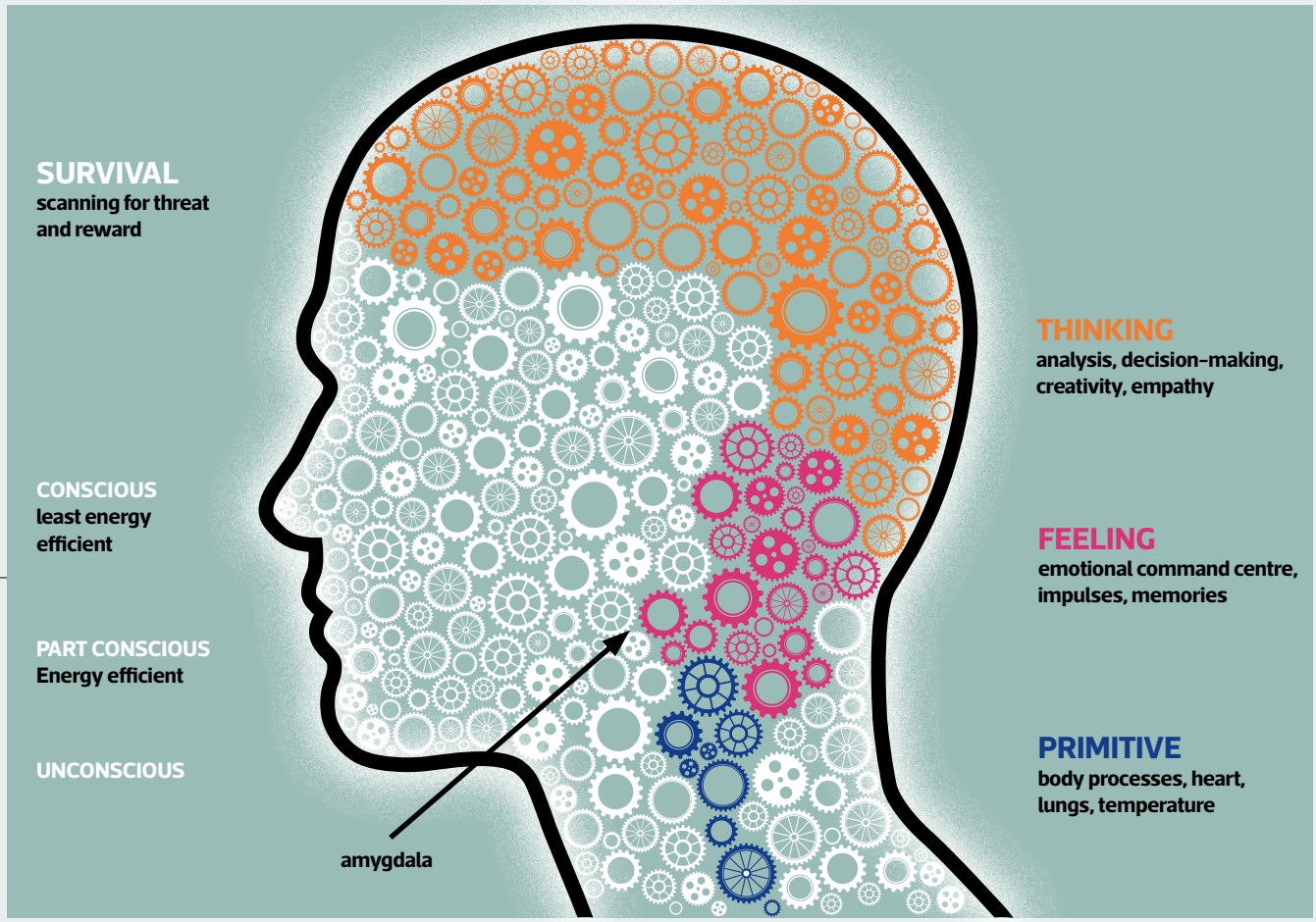
## SCANNING FOR THREATS

The amygdala is constantly scanning for external signals of threat picked up through our five senses: sight, sound, smell, taste and touch, and internal signals of threats picked up, for example, through an elevated heart rate or shortness of breath.

It assesses all incoming signals to see whether they are hostile or familiar. For signals perceived as threats, because they are hostile or unfamiliar, it takes around 80 milliseconds for an automatic threat avoidance impulse to kick in. This happens at an unconscious level. The signal telling us about our actions doesn't reach the thinking brain until 240 milliseconds.

At the same time, one or more avoidance emotions (fear, anger, disgust, shame and sadness) are triggered, which can effectively take the thinking brain offline. This automatically provokes an avoidance/threat response characterised by behaviours such as defensiveness, denial, attack and withdrawal. We are all wired for survival, and prone to these reflex-like responses. All it takes is for us to perceive a threat, which might be the smallest of signals.

As soon as a threat response kicks in, energy is diverted away from the thinking brain and we are not able to use higher brain functions until equilibrium is restored. Generally, we are not aware that it has happened to us or that our productivity has dropped.




**PROJECT SUCCESS RELIES ON OUR ABILITY TO EVOKE ATTACHMENT/ APPROACH BEHAVIOURS SUCH AS CREATIVITY AND COLLABORATION AND TO REDUCE OUR TENDENCY TO PROVOKE AVOIDANCE BEHAVIOURS**

What constitutes a threat is determined by prior experience, and is very individual. For example, seeing a client flinch momentarily as you present performance figures might spark a defensive reaction in you, but have no impact on a colleague at the same meeting.

And there's no saying what impact you barking a response to your client's questions will have. They might take it in their stride. They might not.

Not all signals provoke avoidance behaviours and take the thinking brain offline. If the amygdala assesses signals as familiar and safe, the opposite happens. In this case, they provoke an approach response, generating attachment emotions of trust, love, excitement and joy: words that are more often used to describe the relationship between a mother and baby than adults in the corporate world.

When these emotions are coursing through the body, the thinking brain is operating at its best – people are highly motivated, creative, collaborative and able to learn together.

## PROJECT IMPLICATIONS

The implications for project and programme management are profound. To borrow from executive leadership coach Tara Swart and colleagues: "Whether you like it or not, everything you say or do as a project, programme or change manager, by way of communication, by every verbal and non-verbal means, is transmitted into the feelings systems of others and has an impact on delivery."

Project success relies on our ability to evoke attachment/ approach behaviours such as creativity and collaboration and to reduce our tendency to provoke avoidance behaviours.

Neuroscience gives us an insight into relationship dynamics that were previously invisible, as well as a new understanding of how we unwittingly create these dynamics. It also gives us clarity over their impact on ourselves and others.

If so much is going on beneath the surface of interactions between two people, just imagine what happens on a project involving 10, hundreds or even thousands of people.

Developing an understanding of these subtle human and organisational dynamics is essential if we want to improve project success rates. The evidence is there; the challenge is to act on it. The crucial first step is learning how to avoid avoidance behaviours. P

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