"With this book Carole brings the magic of brain science into the reality of teamwork and projects using examples from real project professionals and explanations from some of the foremost brain, behavioral and social scientists ...

This book takes the project professional deeper into the science and practice of brain science on projects ... to create a framework of practices and behaviours that will help any project team perform to a higher level and experience higher levels of wellbeing."

Ruth Pearce, the Project Manager Burnout Coach, member of the Advisory Board of the Institute for Neuro & Behavioral Project Management and author of *Be a Project Motivator*

"What makes the difference between success and failure is always 'the people stuff'. Most of us don't understand why people behave as they do as individuals and, crucially, as teams. We know that stressful environments and experiences lead to poor delivery and poor mental health ... Carole provides actionable advice, skills, tools and case studies for practical, mindful results."

Keith Leslie, Chair of Samaritans in UK & Ireland and author of *A Question Of Leadership*

"There are two facts every project and programme manager should know: 1) managing change is complex; 2) the human brain is the most complex entity in the known universe.

Unfortunately, few people seem to connect these facts - and then they wonder why their change projects fail.

This book explains how to practically manage the complexities of human behaviour in a project environment. Read it and deliver!"

Stephen Carver, Speaker in Change and Crisis Management at Cranfield University School of Management

Neuroscience for project success

Why people behave as they do

Carole Osterweil

Association for Project Management

Association for Project Management
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First published 2022

British Library Cataloguing in Publication Data is available.
Paperback ISBN: 978-1-913305-17-8
eISBN: 978-1-913305-18-5

Typeset by RefineCatch Limited, Bungay, Suffolk
in 11/14pt Foundry Sans

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Foreword

We need to reduce the number of projects that fail, in every sector.

We have the methods, tools and techniques in project, programme and change management to manage the processes needed to deliver change. However, we often fail to: 1) engage stakeholders effectively, 2) model appropriate behaviours, and 3) put sufficient focus on embedding changes so they become the new normal. The net result is that we don't achieve the intended outcomes and benefits.

An understanding of neuroscience and how the brain works can provide insights into why projects fail, and in what ways emotions and behaviours have an impact. Understanding (and learning to recognise) your own and others' emotional responses can help with engaging stakeholders, risk assessment and decision making, and improving leadership and teams.

Specifically targeted at project professionals in all sectors and all types of projects, programmes and PMOs, this book is a significant step forward because it focuses on a critical missing link of change delivery – the human factor.

Even now project management education focuses over 90 per cent of its curriculum on the processes for designing, planning and coordinating the delivery of projects, and yet the most difficult elements to navigate are the sponsors, stakeholders and end users, because they are driven by emotions that don't fit into the logical case for change.

If we are to genuinely deliver sustainable benefits for society and improve products and services that meet the needs of the populations we serve, then we as project and change professionals need the knowledge and skills to navigate the emotional mindsets of the people we are working with and for.

Neuroscience for project success brings together an understanding of neuroscience with tools and techniques to enable project and change professionals to build their own, and their team's, emotional resilience, and to engage others to successfully deliver sustainable change. We just need to apply it!

Jo Stanford ChPP,
Head of Project Profession, Health Education England,
November 2021

1

Introduction

Imagine asking a doctor to be a doctor without a grasp of physiology, or a linguist to produce a translation without any knowledge of grammar. Yet we've been asking people to deliver huge projects, with big people-impacts, for years. And we haven't given them a model that clearly explains 'why people behave the way they do'. It's crazy!

Does it matter? Yes, it does – because many in the project world find the people stuff so difficult to get their heads around.

I'm not being critical; it's not surprising. A robust model to explain why people behave as they do did not exist. But that's no longer the case. Advances in neuroscience[i] have filled that gap – we have a model. And, as we'll see in this book, its existence offers new and helpful ways to think about the challenges of project and programme delivery – no matter how big or small your project is, what it aims to achieve, or what industry you are in.

In the same way, it doesn't matter if you're just starting out or you've been in the profession for years. The ideas presented here are relevant whether you're grappling with uncertainty, stress and the complexity of human behaviour; your focus is on accurately weighing risks and making good decisions; or you want to prove yourself as a project professional.

I'm not exaggerating when I say the material here has the potential to turn the world on its head – in a good way, because it will enable you to understand, possibly for the first time, why people behave as they do.

I don't want you to take my word for it. Read on, make notes, and come to your own conclusions.

The book is organised as follows:

Part 1: Setting the scene, includes this introduction. Chapter 2, Projects today offers tales from the dark side and practitioners' perspectives.

Part 2: You, your projects and your brain begins with Chapter 3, Why people behave as they do. This includes brain basics, an introduction to emotions and social threat and a framework for understanding whether our Thinking brain is online or offline. These themes are developed in Chapter 4, Groups and stress

[i] The science of the brain and the nervous system

make VUCA (volatile, uncertain, complex, and ambiguous) more VUCA, as I weave them with insights into how to create a psychologically safe or, if you get it wrong, a toxic project culture. Chapter 5, Skills that everybody needs, builds on these lessons to redefine emotional intelligence, explore memory, and illustrate how and why we need to be more mindful and cognitively ready – for mental health and decision making. Chapter 6, The way we see the world, adds new dimensions to your understanding of the human brain and prompts you to reflect on whether the perspectives you bring to your projects help or hinder delivery.

Part 3: Tools to improve delivery performance is primarily a toolkit. Chapter 7, Start by looking in on yourself, introduces the idea that we all contribute to the situations we find ourselves in. It provides tools to help you reflect on your attitude to risk and uncertainty; the stories that you tell; and your emotions and behaviours. The tools, marked with a spanner icon, are designed to inspire you to experiment with different approaches and they are supported by stories from project professionals who have done just that. Chapter 8, Looking outside yourself, expands the frame to take in team members and stakeholders, and to explore how the frameworks introduced in Chapters 3-7 can be used to keep other people's Thinking brains online. It goes on to offer tools that pick up the remaining themes identified by practitioners in Part 1, vision and embedding change.

Part 4: Integrating neuroscience into your projects, starts with four case studies in Chapter 9. Each one offers a deep dive into a project from a different sector and illustrates how the programme lead has used lessons from the earlier chapters. Chapter 10, Overturning command and control, builds on the case studies and consolidates the themes and learning.

You may be on a development journey that is aligned to the requirements of a professional body such as the Association for Project Management (APM), Project Management Institute (PMI) or the Change Management Institute (CMI). If you are wondering, 'how do the ideas in this book support my professional development?' or 'how do I use them to best effect?' you'll find high-level answers in Appendix A and Appendix B.

Outcomes for you

You will go away with:

- a robust model that you can return to, again and again, to address the people challenges on your projects and programmes;

3

Why people behave as they do

To make sense of 'why people behave as they do', we need a high-level understanding of how the human brain works.

As I walk you through this chapter, I am going to introduce some ideas which I suspect will be familiar and others which will be less so.

We're all familiar with the notion of the fight-and-flight response. We know that if we're under extreme pressure or exposed to threat, our fight-and-flight response will kick in. If a car comes swerving towards us down the road, we know we go into autopilot – we do what's needed to avoid the threat and to survive.

Our brain's primary concern is to ensure our survival, through a structure which can be traced back to our hunter-gatherer ancestors.

Many people are surprised to learn that the human brain does not distinguish between physical and psychological survival. It uses the same wiring to deal with physical and social threats.

Before exploring how the brain does this, I want to introduce a few ideas that may be unfamiliar.

- We're used to thinking of the brain as being confined to our heads. Well, I've news for you: it is, and it isn't.
- The brain links through the nervous system to the tips of our fingers and our toes, taking in all our organs in between.
- This brain-body combo operates a single integrated system.
- The health of this system depends on how well we manage our 'body budget'.

We'll return to these ideas later, but for now let's focus on the brain in your head.

The brain in your head

I find it helpful to visualise the brain in our head as having three key parts[2] that are intimately connected. Each has a distinct function, as shown in Figure 1.

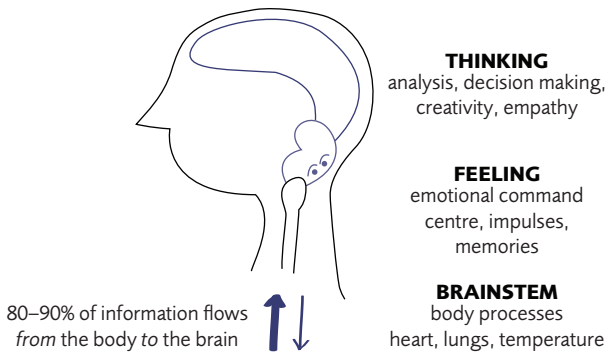

Figure 1 The three-part brain

Source: Visible Dynamics

- The **Brainstem** ensures 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 **Thinking brain** is where higher functions originate – such as analysis, creativity, logical decision making and empathy.

I've drawn Figure 1 with a pair of eyes at the junction of the Feeling brain and Brainstem. This is to show how the brain is constantly taking in information to identify things, people and situations to avoid and conversely, those it is safe to approach.

Figure 1 also shows where the information comes from. One source is *from* your body. Read that again, because it's important and it flies in the face of what many of us believe.

Many of us believe that information flows from the brain to the body. Well, it does. But we must also take the vagus nerve into account. Amanda Blake explains, "The vagus nerve innervates the heart, gut and lungs directly. Bypassing the spinal cord, it snakes straight up the middle of the body. Between 80 and 90 per cent of the fibres in the vagus nerve send signals *to* the brain rather than receive information *from* it. Thinking of the brain as the top- down command centre is about as out-dated as thinking the world is flat."[3]

The other key source of information is your five senses (what you see, hear, taste, touch and smell). Interestingly, while you and I know when we are taking in information through our five senses, the information flow from our body to our brain is typically outside of conscious awareness.

Neuroception and emotions

This process, of the brain and nervous system working together on autopilot and outside of conscious awareness to continually assess threat levels and make judgements about what is safe and what is not, has a name – neuroception.

Stephen Porges, who coined the term, observes that we are not usually aware of the actual cues that trigger neuroception. However, we tend to be aware of the physiological shifts that result.[4] We can all recall moments when a gut-feeling, or an intuition, has told us that the context is dangerous. I'm guessing you can also recall the warm feelings and sensations that go with 'just knowing' you are safe.

We give our changing physical sensations names. They are our emotions. These sensations and the meaning we attribute to them, our emotions, drive us to act in the moment.

The avoidance response

When we're facing a real or imagined threat or danger, neuroception triggers a physical response to enable us to take avoidance action. This typically happens below our level of awareness. However, the more we learn to pay attention to our physical sensations, the easier it is to bring them into awareness and identify the associated emotions.

For example, when I feel my upper chest getting tighter and my jaw clenching, I know I'm angry. When I'm frozen to the spot, with a fluttering in my gut, I know I'm afraid. You might experience anger or fear slightly differently.

When flooded with uncomfortable sensations we have an automatic desire to discharge them. In this sense, our emotions move us to action.

Avoidance emotions, such as anger, fear, shame, disgust and sadness, lead to avoidance behaviours. When feeling threatened, we might become defensive, go on the attack, or withdraw from the situation completely.

As our survival response kicks into action, energy is diverted away from our Thinking brain. Our field of vision narrows, we become distracted, and we are less able to think clearly. Without realising it, we become preoccupied with survival.

Crucially, the brain's definition of a threat is very individual and is determined by prior experience. Working at speed, the brain doesn't stop to test whether a threat is real.

This explains why an introvert may feel put on the spot and exposed when asked for an immediate response in a review meeting, while an extrovert enjoys the opportunity to voice their views. It explains why you might become defensive

4

Groups and stress make VUCA more VUCA

So far, we've mainly looked at interactions between two people. However, on projects things are rarely this simple. There are as many sources of social interaction and emotional triggers as people in the proverbial room (which in the modern workplace includes those we connect with digitally via email, video and social media). Emotions and behaviours are unconsciously mirrored and acted upon by others. *Group and team environments amplify emotions*. As a result, one or two anxious or frustrated individuals can have a disproportionate impact on outcomes.

The Project Stress Cycle (illustrated in Figure 4) shows how this can happen through the story of Fred. As you read it, bear in mind that stress is not a bad thing per se. But before we get to that, let's spend a few moments understanding stress and arousal.

Stress and arousal: finding the balance for optimal performance

We've known since the early 1900s that there is a relationship between the brain's level of arousal and our ability to perform a task. The Yerkes-Dodson law of performance shows an inverted U curve. When we have lots of time and little to do, we can find it hard to focus and performance suffers. The brain needs a degree of stimulation to operate at its best.

Too much arousal makes us stressed, anxious and even overwhelmed. It takes our Thinking brain offline. We lose the ability to focus, we have less emotional control and we are easily triggered into avoidance behaviours. However, there is a middle ground towards the top of the inverted U where, with 'just the right amount of arousal', our Thinking Brain stays online. We are focused, creative and motivated by a cascade of reward emotions.

The vicious circle of excess stress and declining performance

The Project Stress Cycle

Picture Fred, a senior member of the project team. Things are not going his way. He's getting increasingly frazzled. He is holding it together but doesn't realise how stressed he is. He is snapping at everyone and he's finding it harder to act in a rational manner.

The impact on those around him is palpable. No one wants to provoke an outburst, so they give him a wide berth. And of course, after a bruising meeting

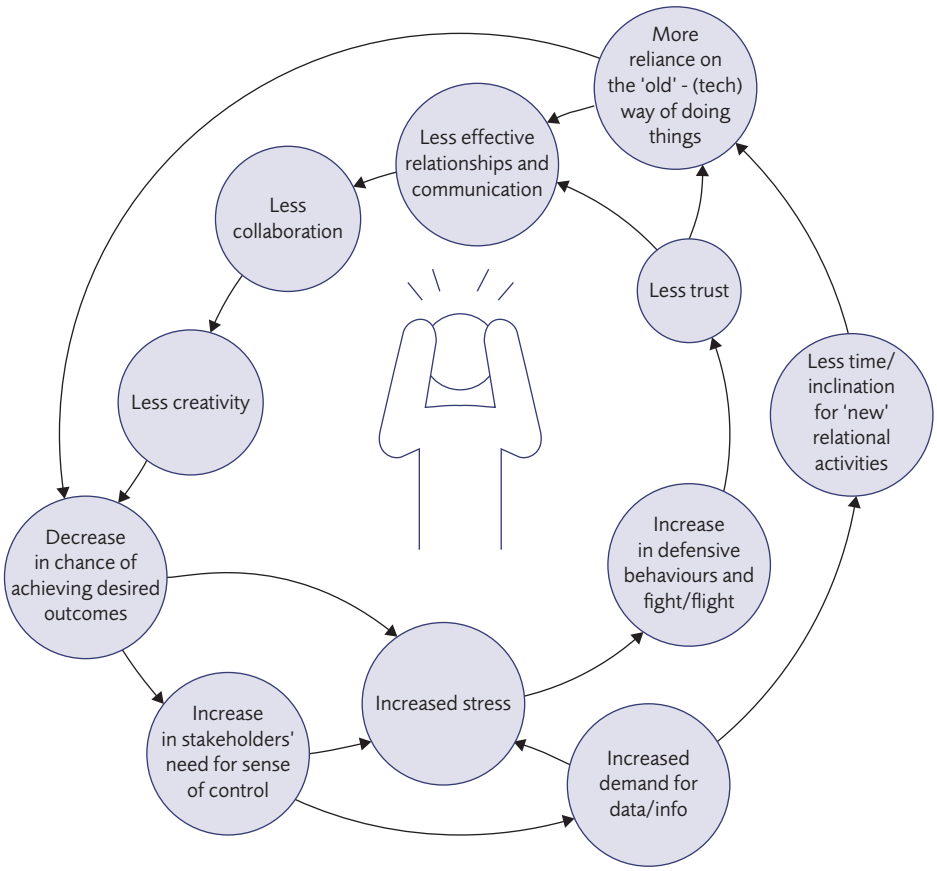

Figure 4 The Project Stress Cycle[1]

Source: Visible Dynamics

it's hard to keep your own Thinking brain online. Trust is falling across the piece and relationships and communication are suffering.

When the project started, Fred and his colleagues went out of their way to highlight the need to invest time in building relationships and ensuring people worked well together. They repeatedly reminded the team that 'successful delivery relies on collaboration and creativity'.

But now the pressure is on and metrics are the primary focus. As relationships get strained, collaboration is more difficult. Rather than waste time struggling to work together, people are falling back into old habits and old silos. They are relying on approaches that worked in the past. But without quality collaboration, it's hard to be truly creative.

And the word on the street? The project is unlikely to achieve the desired outcomes – which does nothing for stress levels.

Powerful stakeholders are getting nervous. They are demanding more and more information in slightly different formats to reassure themselves that things are under control. These demands distract the team from the work they should be doing and add to the stress.

They have less time and less inclination to work collaboratively, and the preoccupation with spreadsheets andmetrics is forcing them to adopt behaviours that reduce the chance of success and multiply stress – right across the system.

The key message is that we need to be alert to *excess stress* because it can trigger a cycle that plays out across the wider project system and impacts delivery.

Some projects slide into stress cycles at crunch points (gateway reviews, for example). Others can be in a chronic state of stress for years – chewing up and spitting out those charged with delivery.

None of this is surprising when seen through the lens of neuroscience. Especially when we consider the powerful stakeholders involved, the scale of investment, and the private and organisational reputations at stake.

Our innate need to belong increases complexity

In telling the story of Fred, I have illustrated how the behaviour of one person can increase the complexity of delivery. Yet even this is a simplification of what happens in real life. In real life, as soon as we get into team and group environments, another source of complexity comes to the fore – our innate need to belong.

When we are in team and group environments we become sensitive to any indication, real or imagined, that we will be ostracised or ejected. (Remember the S for status and R for relatedness in SCARF).

5

Skills that everybody needs

We closed Chapter 4 talking about having the skills to counter the pull towards complexity. In my view, success in a VUCA world hinges on you having the self-awareness to know when your Thinking brain is going offline; and the know-how, or self-management, to do something about it when it does.

I see these two skills as foundation stones. If you've come across emotional intelligence, you'll recognise them – self-awareness and self-management are the foundations of emotional intelligence, too.

Getting the most from yourself: emotional intelligence redefined

The term emotional intelligence gained traction in the 1990s with publication of Daniel Goleman's book of the same name. Since then, we've seen the development of many models of emotional intelligence, typically comprising lists of competences. Goleman offers a list of 12, split into four domains.[1]

- **Self awareness**
  - emotional self awareness
- **Self management**
  - emotional self control
  - adaptability
  - achievement orientation
  - positive outlook
- **Social awareness**
  - empathy
  - organisational awareness
- **Relationship management**
  - influence
  - conflict management

- teamwork
- coaching and mentoring
- inspirational leadership

I find these lists of competences of limited use and prefer to link the four domains to the earlier discussion of how the human brain works using the powerful questions shown in Figure 6.

We start in the top left, looking inside ourselves with the question:

- How online is my Thinking brain?

Once we've answered this, we can turn our attention to self-regulation and self-management:

- How do I get my Thinking brain online/more online?

Then we're ready to move on to others and look outside with the follow-up questions:

- How online are their Thinking brains?
- How do I get their Thinking brains online/more online?

Finally, we add two more questions about building sustainability:

- How do I keep my Thinking brain online?
- How do I keep their Thinking brains online?

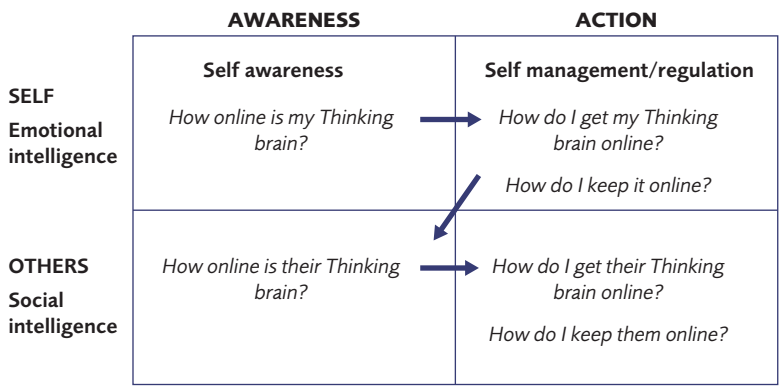

Figure 6 Emotional intelligence as questions

Source: Visible Dynamics

Our emotional and social intelligence relies on our ability to answer the central question: 'How online is my Thinking brain?', so it's vital that we all learn to recognise when our Thinking brain is going offline and develop the skill to bring it back online.

You may be surprised that the ability to do this has a name – it's 'being mindful'.

Many leaders I work with find the notion of 'being mindful' difficult to grasp, and some prefer to talk about 'being present'. Others glaze over at both terms because they sound too new-age. If this is you, the concept of 'cognitive readiness' (introduced on page 60) provides an alternative framing. Whatever your preference, let's explore what I'm talking about.

The skill of being mindful

What do we mean by being mindful?

Professor Mark Williams of Oxford University explains that, when you are mindful, you have: "a direct, intuitive knowing of what you are doing while you are doing it. You know what's going on *inside* your mind and body, and what's going on in the outside world as well.

"Most of the time our attention is not where we intend it to be. Our attention is hijacked by our thoughts and emotions, by our concerns, by our worries for the future, and our regrets and memories of the past. *Developing mindful awareness is about learning to pay attention, in the present moment, and without judgement. It's like training a muscle – training attention to be where you want it to be*. This reduces our tendency to work on autopilot, allowing us to choose how we respond and react."[2]

Read that again. How much of the time is your attention where you intend it to be? How much is spent going over things from the past? Perhaps you're allocating blame (including to yourself) or wondering how you could have done it differently. How much of the time are you here, but not as present, confident and assertive as you'd like to be? If so, perhaps there are moments when you feel a bit frozen, like a rabbit caught in the headlights. How much time is spent with your head in the future – creating numerous scenarios about what's going to happen next and how you'll respond if it does?

I'm not suggesting that you should never look back to learn lessons or that you should never look forward and plan. But I am encouraging you to consider whether there are occasions when you spend too much time and energy ruminating and turning the same thoughts over again and again.

6

The way we see the world

We've already seen that many things inform the way we see the world. I want to highlight two more factors that are critically important in the project world. They are interrelated. You'll recognise one from the discussion of sources of social threat on page 29 – it's our orientation to certainty and uncertainty. I call the other *'the dance between left and right'*. You'll need to read the next section, 'A brain of two halves', to understand why this dance is so important.

A brain of two halves

I started Part 2 by contrasting the classical view of the brain (which assumed we could identify different parts of the brain, each with a different function), with the view of modern neuroscientists, who see the brain as a complex system that is constantly reconfiguring itself.

Despite knowing that we cannot cut a brain in half to find two hemispheres with different functions, I am going to introduce you to the classical notions of the left and right brain. As I do so, please bear in mind that I am not being literal. When I refer to the left brain, I am talking about the neural networks that give us access to speech and language. When I refer to the right brain, I'm talking about the neural networks that give us access to emotions, physical sensations and whole-body sense.

Iain McGilchrist explains that our survival depends on our ability to pay two kinds of attention to the world around us at once. Picture a cat or dog with its attention locked onto a mouse. Confident and single minded, it has no time or interest in what else might be going on. This narrow focus on a fragment of the bigger picture is left-brain work. It has its uses: "It enables us to grasp and manipulate the world for our own ends." [1]

However, this short-term focus will not guarantee survival. We also need the ability to pay attention to what else might be going on, *at the same time*. This is

the work of the right brain – more tentative and less certain than the left, the right brain enables us to see the bigger picture and how we relate to it.

The left and right brain make sense of reality very differently, too. For example, the left specialises in *explaining* with rational sequencing: 'this and then that, and then', whereas the right *describes,* with rich pictures and sensory information.[2].

To understand the significance of this, let's revisit the driving lesson on page 51. What would it look like without the right brain's descriptions?

One Sunday afternoon, a mother was in a car, teaching her daughter to drive. The daughter turned the corner. The mother panicked and told her daughter to pull over. The daughter did so.

We'd be left with a dry explanation, and no felt-sense of what happened.

There are more differences, see Figure 11, which link to how our brains develop.

Consider a baby endeavouring to communicate to its caregivers. Whether cooing and smiling with contentment, or wailing and flailing with frustration, the baby has no words. All its communication is done through gestures, facial expressions, and tonal sounds.

This communication is routed through the right-brain networks. Active at birth, these develop through our first communications, long before the left starts to come on stream.

Remember Figure 1 on page 26. It shows how information flows from the body to the Brainstem to the Feeling brain before it reaches the Thinking brain. This information flow is mostly non-verbal, through the right-brain networks.

Our left-brain networks develop as we acquire language. Language enables us to put words onto things, and to communicate abstract thoughts, logic and conceptual thinking.

These left-brain abilities have been vital in developing the world we live in, and they have a downside. They're becoming more and more dominant in our culture and organisations.

With this trend, and we see it on projects too, we don't routinely pay enough attention to the right-brain worldview, which gives us insight into emotional and social communication and allows us to hold on to multiple possibilities at once.

There are two key messages here.

- The left and right brain networks work together in a complex dance – we need them both.
- We need to actively correct the imbalance if we are to succeed in projects and in life.

Left brain	Right brain
later developing	early developing
linear thinking	holistic
linguistic	non-verbal
logical	raw emotions
literal	whole body sense
loves labels	loves images
loves lists	loves metaphor
loves on/off categories and either/or thinking	loves interconnecting possibilities

Figure 11 The left and right brain

Now, I've two questions for you:

1. Have you spotted the link between implicit memory (page 50) and the right brain networks?
2. Were you tempted to use Figure 11 as a diagnostic?

If your answer to question 2 is yes, let me counsel against it.

Just look what's written in Figure 11. Left-brain networks like on/off categories and either/or thinking. If someone with a strong left-brain dominance hears a right-brain worldview – which is full of interconnecting possibilities – they are likely to dismiss it as 'just plain wrong'.[3]

Don't let your left-brain networks dismiss the potential value of what your right-brain networks bring!

The dance between left and right on projects

Now consider all those formal and informal methods of communication at work. The project plans, the issue logs, the risk registers, and the related conversations over cups of coffee, in virtual meetings and around a meeting room table.

What do you notice about the dance between left and right brain? Are you, your colleagues, sponsors and stakeholders giving both equal airtime in all contexts? Are you comfortable doing so? Do your actions show that you believe it's helpful, legitimate, or even safe to do so?

Part 3. Tools to improve delivery performance

In Part 2 we discovered that we need our Thinking brains online if we are to learn well, collaborate well, be creative and do all the things that are necessary to deliver projects successfully. We also learned that a strong mindful awareness muscle plays a crucial role in helping us do this.

As soon as we recognise that the emotions and behaviour of one person has an impact on the emotions and behaviours of others, we can't get away from the fact that each of us contributes to the situation we find ourselves in.

This was illustrated graphically with the Project Stress Cycle (page 34), which showed how excess stress gets amplified across a project or system. You or I could be Fred in that story, the person responsible for making a VUCA or complex project more VUCA.

It came up again with decision making, when we saw the impact of our cognitive biases and raw, visceral emotions (page 58).

In summary, no matter what our role, if we want our projects to succeed, it's vital that we consider how we are contributing to the situation at a local, team and, on occasion, systemic level through:

- our emotions and behaviours;
- the way we see the world;
- the choices we make.

Part 3 contains a powerful toolkit to help you do this. Its main focus is the application of neuroscience to optimise delivery. However, because some of the tools may surprise you, or seem a bit off the wall, I have included some additional inputs where necessary.

I have tried hard to keep it simple, but this isn't always possible. Interactions between just two people are complex. Scale this up to include the tens, hundreds or even thousands of people involved in delivering a single project, and it can get very messy – there is no point in pretending otherwise!

I've taken the view that I'll serve you best by offering you tools to help you cut through and contain the complexity, peppered with just enough examples to illustrate their application. You'll find more extended case studies in Part 4.

The tools largely answer a series of questions. You'll recognise some of them from Figure 6 on page 46, emotional intelligence as questions.

7

Start by looking in on yourself

How am I contributing to the situation through the way I see the world?

In Parts 1 and 2, the themes of complexity and VUCA environments and relationships came up again and again. In my experience, it's important to get beyond the labels and to find ways of unpicking the assumptions and structures we bring.

The tools below, based on Figure 13, will help you to do this by clarifying the complexity.

Clarifying complexity

The framework in Figure 13 combines Eddie Obeng's project typology[1] with Ralph Stacey's work on complexity.[2] It allows us to consider:

- our assumptions about the nature of our project, and
- our orientation towards certainty and uncertainty.

Stacey suggests the two dimensions for considering the nature of complexity shown in Figure 13:

- the degree of divergence of view (about the way forward, processes to be used etc.), and
- the degree of uncertainty about the future.

Both are subjective. I focus primarily on the second.

People working on the same project often have very different views about where to position the project on these two axes – especially when they come from different organisations, different stakeholder groups or even different levels or specialities within the same organisation.

We know from the discussion in Part 2 that perceived social threats, from any of the SCARF domains, have the potential to evoke avoidance emotions and behaviours (remember Fred and the Project Stress Cycle). Unconscious assumptions about certainty inevitably guide every aspect of our work.

Learning to surface and explore our own assumptions about certainty is a crucial skill. Later we'll see how we can use the framework in Figure 13 to surface and explore the assumptions of others.

What kind of project are you dealing with?

Look at Figure 13 and consider two positions. The top right, where there is pressure to deliver even though we are peering into a future we cannot predict (for example, Project 2020), and the bottom left, where we have absolute clarity and clear agreement about the way forward (the terrain of traditional project management processes).

When you are working on a project in the top right, it's like *Walking in Fog*. When Walking in Fog, the best approach is to set out to explore and understand the uncertainty. You make progress by explicitly exploring the terrain, aiming to put stakes in the ground as you gain clarity, and making informed decisions about where to look next to reduce the uncertainty further.

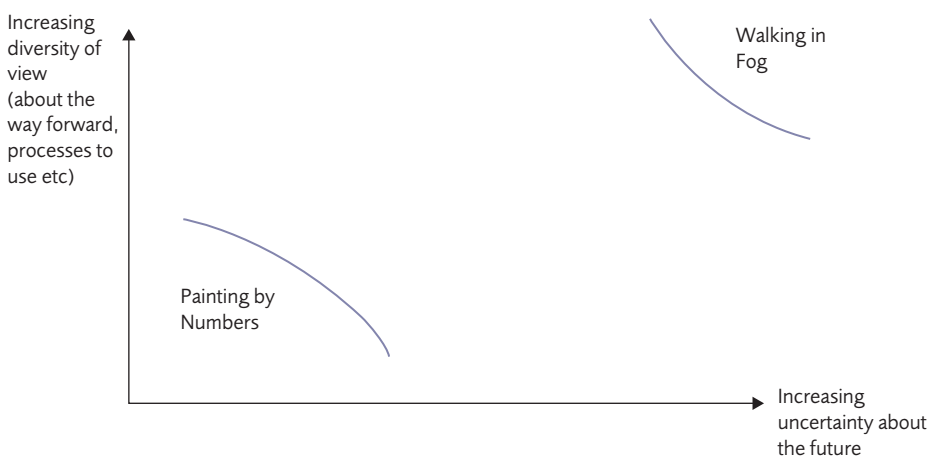

Figure 13 What kind of project are you dealing with?

Source: Visible Dynamics

Working in this way, you move from the top right towards the middle of Figure 13, eventually developing enough experience of the terrain to make realistic risk assessments.

When you reach this point, it's appropriate to adopt more traditional approaches to project planning and risk management – approaches that are akin to *Painting by Numbers*. Essentially, there is sufficient outline of the way forward to make filling in the detail relatively straightforward. The case study about the UK Vaccine Taskforce in Part 4 is a perfect illustration of a project moving from top right to bottom left.

I find Figure 13 particularly helpful because, by using metaphor, it allows us to access knowledge held in the right brain; we all know, or can imagine, what it feels like to be Walking in Fog, and we all know, or can imagine, what it feels like to be a child playing a game like painting by numbers.

Figure 13 is also powerful, because it allows a seamless shift in language from uncertainty to risk without making judgement about which is more appropriate. If you need a reminder, the points below, from *Project Resilience*, clarify the differences.[3]

Risk and uncertainty

- Risks are associated with clarity and predictability – they can be quantified through a rational assessment of how likely, based on past experience, an event is to occur. These assessments are the basis of risk management approaches.
- Uncertainties are assumptions associated with ambiguity and novelty – they are difficult to articulate and define, but this shouldn't prevent you treating them seriously and exploring them carefully. After all, uncertainties that come to pass have a real, and sometimes catastrophic, impact on delivery and outcomes.

Figure 13 provides a language to talk about where we feel most comfortable (our orientation towards certainty/uncertainty). It also provides a language to talk about and, as we'll see later, compare our expectations about the journey ahead.

Project expectations go beyond the rational, left-brain discourse that characterises most project-related conversations (strategies, objectives, activities, risks etc.).

Earlier, we said the human brain is wired for survival; it trusts its own experience above all else. We are constantly comparing the current moment with past

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Looking outside yourself: bringing others' Thinking brains online

I've introduced a number of ways to bring your Thinking brain online, come into the present and identify how you are contributing to the situation. When you can do this, you'll be well placed to look outside yourself and:

- recognise when others' Thinking brains are offline;
- make informed choices about the behaviours and interventions required to bring them back online;
- see systemic patterns: for example, how psychologically safe is it? What's the dominant orientation, certainty, or uncertainty? How is stress playing out across the system?
- take a view on if, and how, to intervene.

With so many things to consider, I cannot hope to cover them all from every angle. Instead, I have elected to introduce the approaches I find particularly powerful which build on the themes we've already touched on.

Exploring complexity with others

What are we dealing with?

You'll recognise the graph in Figure 18 from earlier. Here we are using it as a tool to surface and explore the assumptions of others.

Simply explain the axes, and the terms Painting by Numbers and Walking in Fog, then:

- Ask: 'Where do you see this project?' (Invite them to put an X on the graph.)
- Ask: 'What makes you place it there?'

- Be really curious about the replies. 'What is clear? What is foggy? What do they need to see to make it less foggy?
- Where is there common ground you can build from?
- Where are the differences? What needs to happen to reduce the differences?

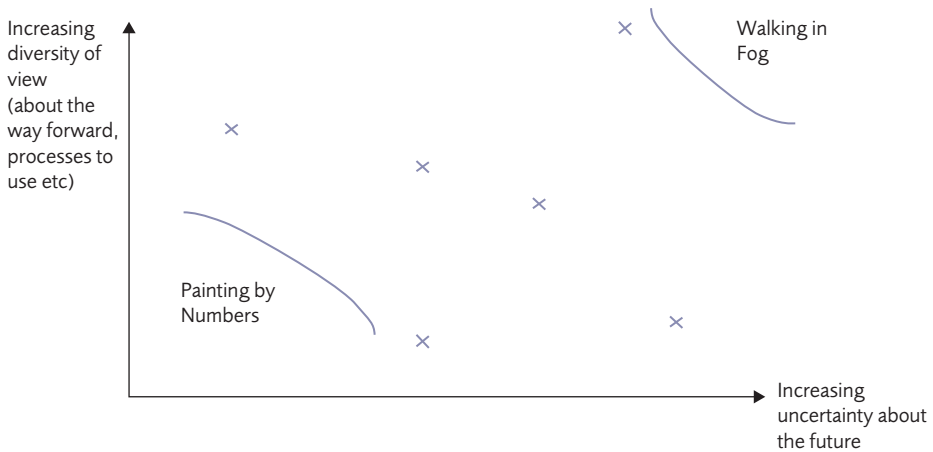

Figure 18 Exploring complexity with others

Enquiring in this way helps to create the psychological safety to enable all involved in project delivery to contextualise and better understand the challenges. It also allows you to value the contribution and experience of those with an orientation towards certainty, while opening a space that makes it possible for them to tolerate discussion about uncertainty, and vice versa.

As you drill down, you'll uncover, possibly for the first time, the aspects of the project that each of you finds particularly ambiguous and worrisome. Together you'll be able to develop focused strategies for dealing with the 'what' of uncertainty. You also need to consider the 'how'.

How can we best work together?

You can also use this graph to explore preferences and how you can best work together. Start with a simple question:

- Where on Figure 18 are you most comfortable operating – Painting by Numbers or Walking in Fog? (Invite them to put an X on the graph.)

You then have the option of probing further, just as we did on page 80. I'd counsel against asking directly about their inner personal expectations. A more elegant of way of finding out about these is to ask: What are your hopes and fears?

Depending on the situation, these opening questions may lead you to the detail. For example, imagine you're speaking to a new team member. You've agreed the project is foggy, and they've told you they find uncertainty difficult to handle. It might help to explore:

- What's likely to take your Thinking brain offline?
- How can you help me spot when this is happening?
- What do we need to put in place to help you keep your Thinking brain online?

Walking in Fog: Leonie's story

Leonie, a programme director, explains how these tools supported her work on a high-profile, multi-faceted programme: "I'd been reflecting on my approach to leadership; people take their cues from you as a leader in formal and informal settings. I can be quite emotional, so I had to find ways of moderating that, and learn to be very careful about who I spoke to when I was feeling pressured.

"The notion of Walking in Fog was so important. I couldn't see past one particular milestone; it was massively foggy and made me very anxious. I spoke about it to my deputy, who is hugely practical. His reply, 'I can figure that out for you', took the pressure off. Taking time to reflect on how I felt, and choosing who to share my nervousness with, was crucial.

"We got through those times because we could rely on each other. I wasn't alone, wandering about in the fog; there was a group of us. Yes, I was leading this particular venture, but others were there to support me and contribute to moving things forward. They didn't expect me to have all the answers (even if at times I thought I should). However, they did expect me to have a sense of which direction to go."

She went on to reflect on how her understanding of stress evolved over time, and how the Stress Cycle had helped. "I came to understand that stress is contagious. If I am stressed, other people are stressed as well. A lot of the time I was dealing with professionals who know how to put on a good front. But underneath, they are human too. I learned to give them the space to be stressed – this meant not reacting if they were a bit sharp or short with me.

9

Case studies

The preceding chapters have offered you new ideas, tools and mini-case studies. In writing them, I have been encouraging you to look through a pair of binoculars, with the eye-piece focused primarily on what you, as an individual, can do to influence your teams, stakeholders and project delivery.

As we move into Part 4, I want to flip the binoculars and invite you to look at the world through the opposite lens: what happens at the project and organisational level, when the ideas we explored earlier inform everything you do?

I answer this question with four case studies, covering projects that differ enormously in terms of sector, geography, scale, duration and challenge. Separately and together, they give you a window onto how successful project leaders have applied neuroscience, and used many of the frameworks and tools I introduced earlier, to change their whole organisation's approach to delivery.

If you are not used to flipping the binoculars and moving from the systemic to the personal, you might want to check out the suggestions in Appendix B.

Either way, you can read the case studies in order, or start with the one that seems most pertinent for the challenges you face.

- Project initiation and delivery: Belfast Transport Hub, Translink
- Cultural change: introducing a Growth Mindset at Akamai Technologies, Inc.
- Smoothing the way in a merger of government departments
- Walking in Fog: leading the UK Vaccine Taskforce.

Project initiation and delivery: Belfast Transport Hub, Translink

The Belfast Transport Hub (BTH) is one of the largest single investments in Northern Ireland's history. Taking shape at Weavers Cross, it's a city-centre site that includes the existing Europa Bus Centre and Great Victoria Street train station. BTH is the catalyst for a wider regeneration programme that aims to attract 8,000 new jobs and £1bn investment into Belfast by 2035.

Duncan McAllister, programme head, talks about the challenges of delivering a construction and redevelopment programme in a live, operational environment where 20 million bus and rail passengers a year don't want their journeys interrupted. All in the context of a post-conflict society where political instability continues.

He picks up the story in November 2019, when contracts had been signed and the initial phases of delivery had just commenced. Contractors were onsite for the £20m enabling works, and procurement for the main construction contract had begun. In parallel, the team had started the initiation phase for the redevelopment programme, and were working on its vision.

Business change

Alongside construction, we knew there would be a big element of business change in the operations side of the business[i] and corporate functions[ii]. The programme would impact their work in ways they hadn't seen before.

For example, when we started out, we took the view that collaboration with potential construction partners was crucial to success. We wanted to encourage discussion and dialogue by bringing suppliers to site, to show them the location of work, brief them about expectations, and explore the project's complexities.

When we first spoke about introducing this level of collaboration, we'd be told, 'that's not possible'. People weren't resistant to the idea – they were anxious about things being taken out of context and the potential risk of a challenge to the competition. They couldn't quite see how it could be done while remaining compliant with the procurement and contractual assurance procedures for a scheme of this size. We've now worked with internal teams to demonstrate that it is possible.

As a result, we've seen many benefits. It's led to systems and approaches that incorporate best practice while maintaining the commercial tension to ensure competitive, quality bids. It's supported early relationship building with suppliers and a clearer understanding of our needs and expectations.

We can be open and frank, with our main works contractor and their supply chain, saying: 'We can only do so much as the client. We need your input to find solutions and take us to the next stage of delivery.' This has brought groundbreaking innovations. They've risen to the challenge and linked directly

[i] Includes Rail, Bus, Engineering, and other departments

[ii] Contracts, procurement etc

with our operational and corporate teams – who have responded by adapting and changing culture to arrive at a solution that works.

The introduction of new technology into BTH illustrates a very different challenge. For this to succeed, we invited people with operational expertise to act as business change ambassadors and champions. Their role is to help the project team understand the constraints of keeping the buses and trains running around the clock; and to ensure the operations team understand, a) what a construction project of this scale looks like, and b) how it can have a long-term positive impact on bus and train services.

This focus on the long-term gain is vital in counterbalancing the short-term pain and disruption that comes with each set of operational changes required as we move through the programme.

The risk of a toxic culture: mitigation management

The project team knew we were being ambitious, and that we had a relentless and time-sensitive programme. It was challenging enough to have multidisciplinary teams pushing for planning while we were advancing procurement matters and in parallel designing new solutions for delivery of the final station and operational areas.

But that wasn't all we had to contend with. Additional pressure came from knowing we were under the spotlight – this was the largest infrastructure project the business had delivered to date. What's more, it was the first time Translink had done anything on this scale of complexity and disruption to a live operation, or over such a long period of time.

We could see that everyone was going to be under a lot of personal and professional pressure. We couldn't deliver without the people, and we recognised the risk of team burnout. This could lead to a toxic culture, and getting trapped in the dynamics of the Project Stress Cycle. We concluded that protecting mental health and wellbeing was vital.

Mental health and wellbeing

Translink already had a mental health and wellbeing initiative in place, and had set up processes to encourage employees to adopt a mindfulness approach. This platform was the natural starting point for addressing our concerns.

We linked to it by establishing project mental health and wellbeing champions, and being explicit with team leaders and members about uncertainty. The BTH

10

Overturning command and control

This book started with some big statements:

- We need to reduce the number of projects that fail – in every sector.
- We've been asking people to deliver huge projects, with big people impacts, for years, and we haven't given them a model that clearly explains 'why people behave as they do' – it's crazy!

I went on to observe that this isn't surprising, because until recently a robust model to explain why people behave as they do did not exist. However, this is no longer the case. Advances in neuroscience have filled that gap.

I hope you've discovered from reading the preceding chapters, and experimenting with the tools in them, that starting from the inside with an understanding of how the human brain works really does equip you to successfully navigate the unpredictable world of project delivery.

I hope you can also see that, if we want our projects to succeed, we cannot continue to focus most of our effort (and training), on the processes for designing, planning and coordinating the delivery of projects, while assuming others – those pesky stakeholders, team members and end users – will fall in with our plans, because we've told them to do so with volume and vigour.

Now we have a robust model to explain why people behave as they do, it's immediately obvious that this assumption is fundamentally flawed. In fact, the opposite is true!

All processes for designing, planning and coordinating the delivery of projects must *start* with the assumption that we need to do the work that will make it possible for others to willingly join us, and collaborate, in our project endeavours.

If they don't want to, it will be nothing to do with resistance to change. It will be because we've not paid enough attention to their very human needs, and we've inadvertently set off an avoidance response.

Yes, it's all about moving away from a 'command and control' to an 'empower and engage' model of leadership. And it's more than that.

The authors of *Project Resilience* explain: "We are constantly challenged by expectations of certainty and thus control. We vote for people who sell us an illusory world of stability, predictability and wellbeing. In turn, we expect others to plan and control the future, and project owners and sponsors also expect that of us. To put your hand up and argue that the world out there is largely unknowable is a daunting task. Anyone who's trying to 'sell' a project knows that it's more advantageous to pitch it as (reasonably) certain. Presenting your plan as largely unpredictable, but nonetheless resilient, is a tougher prospect. Even if both the audience and the presenter, deep down, realise that there are aspects that remain unknowable, it is more comforting to go with a confident, traditional, planned approach. Of course, as long as this remains the case, the life of the project manager is likely to be challenging."[1]

There you have it. There's an inherent conflict between what we know deep down on the inside, and the pull to conform to expectations and stay with the comfortable, if illusory, world of certainty and control promised by traditional approaches to project management and leadership.

I concluded Chapter 2 on page 21 with the reflection that, as a profession, we know that command and control is an out-dated approach, and we are *grappling with its pull and its legacy in lots of ways*.

In writing this book I knew I'd be going out on a limb and introducing ideas that would be exciting to some readers and appear far-fetched for others. Wherever you are on this spectrum, Appendix A shows that what I've written is consistent with the latest thinking from the professional bodies.

In concluding this book, I want to illustrate how material from earlier chapters talks to my point; we need to go beyond thinking about command and control solely in terms of a leadership model. We also need to deal with its pull and its legacy.

As I say this, the proverb, 'the fish are the last to discover water', springs to mind. Many of us who work on projects have grown up in the world of command and control, and we take its constraints for granted.

The fish are the last to discover water

Everything we learned in Chapters 3 and 4 reinforces this point of view. We are wired for survival and we're social creatures. Our need to belong is so strong that in environments of questionable psychological safety our reflex is to keep quiet, even if this means denying our truth and going along with irrational decisions and dysfunctional behaviours that work against the best interests of project delivery.

Appendix A: Supporting your professional development

I've written this appendix to answer the question, 'how do the ideas in this book support my professional development?'

I do so by taking a high-level look at the key texts and development frameworks used by three professional bodies: APM (Association for Project Management); PMI (Project Management Institute), and CMI (Change Management Institute).

I make no judgement about which one is better, or which one is most appropriate for you.

If you are not studying for a professional qualification, you may be interested in the question I address in Appendix B: 'How do I apply the ideas in this book to best effect?'

The APM approach

Two key APM texts are designed to support the development of all project professionals, no matter what their level of experience, geography or industry. These are the *APM Body of Knowledge 7th edition* and the *APM Competence Framework*.

APM Body of Knowledge 7th edition

The central idea of the *APM Body of Knowledge 7th edition* is 'the need to balance multiple competing objectives and challenges within a defined set of time, cost and quality constraints in order to achieve beneficial change'.[1]

And that's where the material I've presented in this book comes in – you need to understand 'why people behave as they do', if you are to balance these constraints and achieve beneficial change.

Appendix B: How do I apply the ideas to best effect?

One of the recurring themes in this book is that *we routinely underestimate what it takes to consolidate learning and change*.

We see this at a team level, a project level and individual level. Given this, it seems important to offer you some thoughts on how to apply the ideas in this book to best effect.

I want to start by drawing your attention to:

- the section on the Growth Mindset, page 39;
- the health warning on page 76. The book contains lots of tools. If you attempt to evaluate them through skim reading, you'll be disappointed with the results. *You have to use them too*.

To get the most from any of the ideas in this book, you'll find it helpful to take your time and mull on them:

- What resonates?
- What's challenging?
- What might it begin to explain?

Remember the construction I introduced on page 121, "I used to ... and now I'm discovering". Try it out for yourself. Go on, I dare you.

My next tip: speak to others about the ideas and the tools, about what you are experimenting with and what you are discovering.

I'm not asking you to be evangelical. I'm encouraging you to be curious.

If talking about this seems a big step, how can you make it safer for yourself? Who do you know, at work or outside of it, that you can talk to? Remember Leonie's story on page 105 – she was very careful in deciding who to speak to about the fog.

Appendix C: Putting words on emotions and sensations

Lisa Feldman Barrett explains that the richer our vocabulary, the greater our ability to talk about subtle differences in emotions (emotional granularity).[1] If you have hundreds of words, you have the 'equivalent of a gigantic toolbox fit for a skilled craftsperson'. If you have dozens of words, it's equivalent to 'a run-of-the-mill little red toolbox, filled with some pretty handy tools. Nothing fancy, but they get the job done'. But if you have a limited vocabulary, it's like only having access to 'a hammer and a Swiss Army knife ... a few more tools wouldn't hurt, at least in a Western cultural setting'.

The lists below include around 150 words from Hilary Jacobs Hendel's book, *It's Not Always Depression*.[2] They are intended to help you increase your vocabulary when listening to your body and describing your physical sensations and feelings.

The lists are not exhaustive, and there are overlaps – some words appear in more than one place. Take 'explosive', for example. It is listed with 'angry' and with 'being energised'. There is no right place; the only thing that matters is what the word 'explosive' means to you.

If the lists don't accurately capture what you want to say, try using an image or metaphor, as we did on page 84. It's like ... the sun is rising; a tightly strung tennis racquet; I have to drink from a firehose.

Common words for physical sensations

Angry: fiery, hot, burning, explosive, impulsive;
Tender: cosy, touched, warm, moved, aglow;
Anxiety: queasy, twitchy, pit in stomach, fluttery;
Shame/depressed: empty, frozen, heavy, alone, drained, small, disappearing;
Vulnerable/hurt: bruised, raw, sensitive, wobbly, prickly;
Sad: alone, blue, empty, down, burdened;

About the author

Carole Osterweil is a project troubleshooter and coach who's on a mission – to bring an understanding of how the human brain works to the world of project management and business transformation.

Carole's pioneering approach is informed by over 20 years as an educator and consultant at Ashridge – Hult business school; her experience as an international project leader endeavoring to Walk in Fog, and her training in psychotherapy and the arts. Now based at Visible Dynamics, she also coaches on the UK Government's Project Leadership Programme at Cranfield University.