

Creativity at Work

Alan Barker



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1st edition

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ISBN 978-87-403-0531-9

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About the author



Alan Barker is Managing Director of Kairos Training Limited, a specialist consultancy that delivers training and coaching in communication skills, clear thinking and creativity.

Kairos operates globally. As well as working with organisations in the UK, Alan regularly travels to other parts of Europe, as well as working in the Middle East, Asia, the United States and Africa.

Alan is the published author of sixteen books.

Alan's blog is [Distributed Intelligence](#).

Find out more about him and about Kairos from the company's website:
www.kairostraining.co.uk

Preface

When I told one of my clients that I was writing a book about creativity at work, he said: “Managers aren’t interested in creativity. They want to know how to manage better.”

Well, maybe.

Creativity has gained a reputation, among some managers at least, as a ‘fringe’ activity: quite fun, but of little practical use in the workplace. A friend of mine refers to it as ‘basketweaving’. And management – most managerial work – is, after all, about getting practical results. It’s about doing what works, and trying to do it better.

Management is about ‘making it happen’.

But what if making it happen isn’t sufficient? What if we need to make something *new* happen?

What if we need to do something *differently* rather than better? What if, instead of continuous improvement, we want discontinuous change? What if we want – or need – to create something new?

Of course, those needs might be written in to our job descriptions. Anyone in the ‘creative industries’ – and plenty of people outside them – need to think creatively as a matter of routine. Many of us – doctors, teachers, research scientists, engineers, consultants, marketers – frequently need to find creative solutions for unprecedented problems.

Sometimes, we need to be creative because external circumstances change. Our organisation undergoes a radical restructure; we suddenly face competition from new technologies; our customers start to make new and unexpected demands.

On other occasions, we *want* to be creative. We might be dissatisfied with our current situation; we may want to change direction radically in our work, our career or our life.

At times like this – when we need to, or when we want to – we need to engage a different kind of thinking: not the routines, protocols and habits of operational work, but different disciplines, different ways of using our imagination and our powers of logic.

The title, *Creativity at Work*, has two meanings.

First, this book is about how creativity works: the principles and mechanisms by which we can look at issues more richly, generate new ideas and create new solutions.

Secondly, the book is about how we can apply the skills of creativity in the workplace. And of course, the workplace might be anywhere where we do work: office, laboratory, playing field, kitchen or nursery. At the heart of the book is a process that takes you from wanting to create something new to making it happen.

Creativity is fun. And it's also, for more and more of us, key to our success. If you're interested in unlocking your creative potential, whatever your work, then this book is for you.

Enjoy.

1 Why be creative?

Here's a simple exercise for you.

Count the number of pieces of clothing you put on this morning. Include jewellery, watches and other accessories.

Now consider: how many possible ways were there of getting dressed this morning? And how many of those possibilities did you think about?

(The answer is in a box at the end of the next section.)

1.1 Operational thinking

Most of our work is operational. At its simplest, operational work is functional, maintenance or day-to-day work. Operational work is the work we do to continue doing what we always do.

We do operational thinking so that we can do our operational work to a consistent standard, with a minimum of effort. Operational thinking applies standards, rules, routines and procedures so that we can do our operational work to a consistent standard, with a minimum of effort.

Think of operational thinking as a cycle in four stages.

- **Plan:** to do something
- **Do:** what we planned to do
- **Review:** “What worked well? What went wrong? What have we learned?”
- **Think:** “How do we adapt or improve what we do in the light of our review?”



As we do our operational work, we organise all the routines, rules and protocols that we use into mental patterns. The patterns that don't work tend to fade away; the successful ones become stronger. We learn to recognise those patterns, to repeat them and plan with them.

Those successful patterns grow by extension over time.

They become mindsets.

How many possible ways are there of getting dressed in the morning?

The answer is simply the multiple of all the numbers up to your chosen number of pieces of clothing.

For example, if you put on eight pieces of clothing this morning, the number of possible ways of getting dressed is:

$$8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 40,320$$

Of course, some operations are not allowable: we don't usually put on socks over shoes or underwear over trousers or skirts.

But even a tenth of that number presents a formidable array of options.

The mindset we've developed over the years helps us to ignore all the possibilities. Without it, we'd still be wondering what to do at bedtime.

We might only ever notice the mindset when it's disrupted by something unexpected.

1.2 The pleasures and perils of mindsets

Mindsets are essential to operational thinking. Without them, we couldn't even *do* operational work.

Mindsets create the assumptions without which operational work wouldn't happen. Without mindsets, we wouldn't be able to get through the day. Each operational task would become a new problem, and before long we'd be overwhelmed with problems.

The danger with mindsets is that they dictate what we see. That's because, like all mental patterns, mindsets *delete*, *generalise* and *distort*. (This insight is based on the work of Bandler and Grinder, the founders of neuro-linguistic programming.)

A mindset will tend to *delete* information that doesn't fit the mindset. If we didn't delete information, we'd be faced with too much information to operate effectively. Think about driving the car: we have developed mindsets that allow us to delete vast amounts of information on the road so that we can focus on driving safely.

A mindset will also *generalise* by helping us to draw broad conclusions from repeated experiences. A mindset tells us that if we flick the switch, the light will come on. Such generalisations help us operate efficiently.

More troublingly, a mindset can actually *distort* information in order to strengthen itself. For example, we might have a distorting mindset about certain kinds of driver – drivers of different gender, age or ethnicity to us, for example – that leads us to prejudge their driving in certain ways.

One of the most famous demonstrations of mindsets, and their power to delete information, was set up by Daniel Simons of the University of Illinois and Christopher Chabris of Harvard University in the late 1990s.

I can't tell you more about it without spoiling the effect.

Watch the video first [here](#), and read more about it [here](#).

So mindsets are useful at work – indeed, most of the time, they're essential. But they can become dangerous when we want to look at our work differently, think differently or make something new.



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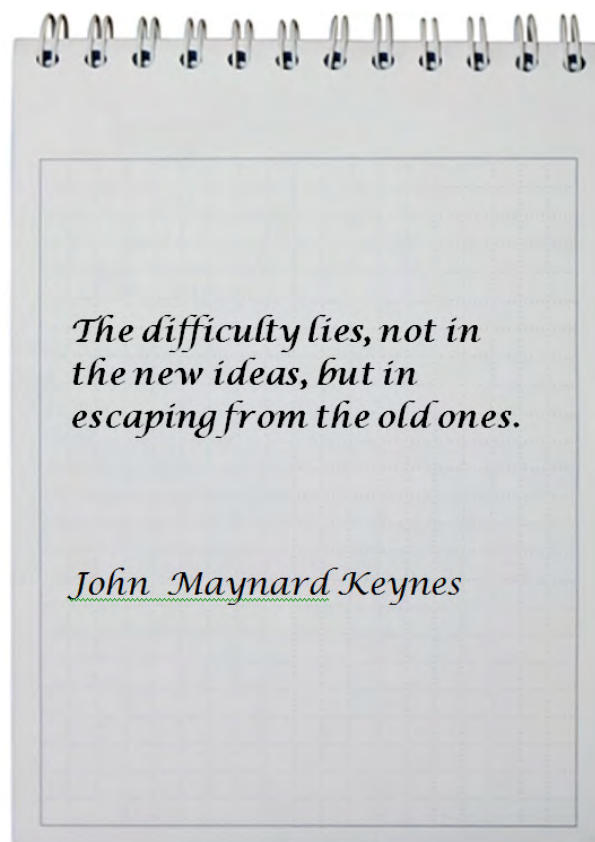
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Here are just a few obvious examples of how mindsets generate unhelpful assumptions in our organisations.

- **Product development:** we focus on improving the product specification rather than looking for different ways of satisfying the customer
- **Introducing new IT systems:** existing IT systems generate mindsets that lead us to design 'bolt-on' solutions rather than re-defining user requirements
- **Contractual negotiations:** we go into the negotiating room with mindsets that are preconceived 'issues' rather than surfacing the assumptions that both sides might hold – and challenging them
- **Responding to customer complaints:** we assume that a complaint is 'something to be dealt with' rather than an opportunity to improve our products or services
- **Quality management:** we may assume that 'quality' is about removing defects rather than building quality in to a product
- **Strategy:** we may view our organisation through the metaphorical mindset of a machine (in need of 're-engineering') rather than asking: 'What business are we in?'

Mindsets help us think operationally, but they're a real problem if we want to think creatively.



1.3 Finding something new

Operational thinking helps us do what we've always done. If we want to find something new, we need to leave the operational cycle – at the thinking stage, because we need to think differently – and cross into the creative cycle.

We need to take the creative journey.

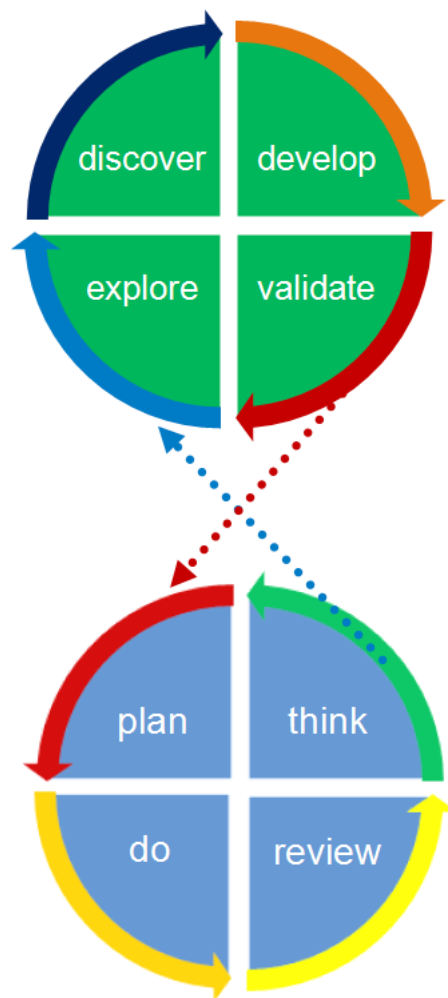
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These two cycles have radically different aims. The aim of the operational cycle is to do the same thing better. The aim of the creative cycle is to *find something different*.

On the creative journey, we:

- explore;
- discover;
- develop (think about what we've discovered); and validate (make something useful from what we've discovered)

Most of us take occasional creative excursions at work. We might take our team on an away-day; we might attend conferences or trade fairs. These are excellent opportunities for creativity. But, apart from these occasions, we tend to cross from the operational cycle into the creative cycle only:

- because we have to; or
- because we choose to.

It may take a crisis to force us to do some creative thinking. If a business relationship is in danger of collapsing, we might have to examine our assumptions about it. If a company is facing bankruptcy, we may have to come up with creative solutions for keeping the enterprise afloat, or to reinvent it.

Unfortunately, crises tend not to be the best times to think creatively. They tend to be fraught with stress. Decisions need to be made fast. Our creative options tend to be severely limited.

The alternative is to *choose* the journey. We can find time to leave the operational cycle behind for a while and do some creative thinking. We can engage in thought experiments or ‘blue-sky’ thinking; we can run brainstorming sessions; we can run a research project or a pilot. But we’re unlikely to choose that option unless we want to.

The first key skill of creativity is inner motivation: the desire to create something *for its own sake*.

We may hesitate to take the creative journey because of the risks. What if we find nothing of any use? What if our idea meets resistance? What if the solution we develop actually creates more problems?

If the first key skill of creativity is inner motivation, the last is risk management.

We’ll explore inner motivation in Chapter 3, and risk management in Chapter 8. In between, we’ll explore the four other competences required on the creative journey: exploring (Chapter 4), discovering (Chapter 5), developing (Chapter 6) and validating (Chapter 7).

But before we set out, we need to remember two important points.

First: the two cycles are separate. While we’re on the creative journey, we should avoid operational thinking. (You don’t go on holiday and keep checking your emails from work, do you? *Do you?*)

Secondly: creativity is not simply doing what we like, or sitting around waiting for something to happen. To be properly creative requires rules and discipline, just as much as operational thinking. But the rules, and the disciplines, are different.

Creativity, then, is not a ‘free-form’ activity, in which anything goes. What it might be, in fact, is the subject of the next chapter.

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2 What is creativity?

What does the word 'creativity' suggest to you?

I often ask that question at the start of my creative thinking workshops. The first answers I get usually suggest that we think of creativity as something exceptional.

Being a genius

Making something out of nothing

Having a baby

Producing a work of art

Thinking of totally new ideas

There's a long tradition of seeing creativity as something rare: something that only a few people possess. When I say I run workshops in creative thinking, people sometimes reply: "That would be no good for me. I'm not a creative person."

So let's start there. How special is creativity?

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2.1 Creativity as magic

The magical view of creativity is that it creates something out of nothing.

Alan Moore, the author of novels and graphic novels like *V for Vendetta*, puts it like this:

“To me, all creativity is magic. Ideas start out in the empty void of your head – and they end up as a material thing, like a book you can hold in your hand. That is the magical process. It’s an alchemical thing. Yes, we do get the gold out of it but that’s not the most important thing. It’s the work itself.”

According to this view, creativity involves being moved by mysterious, unconscious, inexplicable forces.

We’re talking about inspiration.

To be inspired is to draw power and influence from some outside source, perhaps sacred or secret. The classical Greeks spoke of the Muses: nine goddesses who inspired humans in literature, science and the arts. It’s an idea that has persisted to the present day: a recent newspaper article about performance artists carried the headline ‘My muse and me’.

To be creative, according to this view, is to be inspired by something outside ourselves and outside our control: a divinity, perhaps; or nature; or a person; or perhaps part of the unconscious (the name of the Greek nymph Psyche is also the Greek word for ‘spirit’, or ‘soul’).

The magical view of creativity is thus both a very ancient idea and a very modern one. History is littered with stories of extraordinary individuals whose inspired visions have shaped the world. Many organisations have departments where the ‘creatives’ are lodged. They’re easily recognisable: they don’t wear ties, they come to work late because they’ve spent the night being inspired, and they’re hard to manage.

It’s easy to believe that, if creativity is magic, then you either have it or you don’t. The lucky few creative folk are plugged in to some kind of hotline to a source of secret creative energy, which both inspires them to great brilliance and threatens them with mental instability. The rest of us must simply be content with being operational drones.

Now, this magical view of creativity isn’t entirely ridiculous. Some people *do* seem to be more in touch with their creative energies than others; and creative ideas *do* seem to arrive in our minds out of the blue, from some unknown place.

Perhaps that place is the unconscious.

But it doesn't follow that creativity is the preserve of a select minority. After all, we *all* have an unconscious; and we can *all* gain access to it, every so often. Sometimes the unconscious makes us a gift unbidden; and sometimes we can help it to reveal its secrets.

There *is* an element of magic in creativity; but it's a magic that we can learn.

2.2 Creativity as journey

Joseph Campbell was a mythographer. He studied myths and stories from around the world, and noticed how they tended to follow similar patterns. (He was also an accomplished athlete: for a time he was among the fastest half-mile runners in the world.) His book, *The Hero with a Thousand Faces*, inspired George Lucas when he was planning *Star Wars*.

Campbell saw creativity as a journey. He defined it like this:

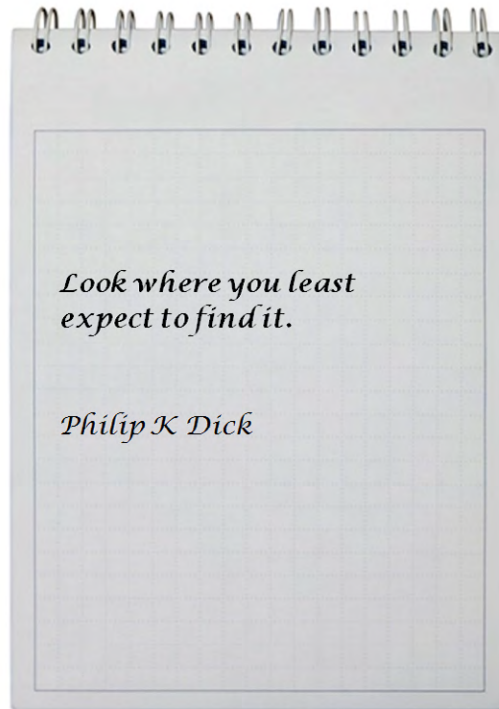
Creativity consists in going out to find the thing that society hasn't found yet.

It's a powerful idea. Every element of this sentence has something to say about creativity.

going out

Creativity is a form of exploration. We take a journey: an excursion, beyond the boundaries of our normal, operational thinking and experience. We venture into unknown territories. Why? Because we're looking for new ideas; and if we look where we've always been, we'll find what we've always found.

There's a seeming paradox here. To find the newest ideas, we have to look in the least likely places. That's not easy. We may need help in finding those unlikely spots, and investigating them.



That's why creativity sometimes seems scary, chaotic or disorientating. But it's also what makes creativity thrilling and intriguing.

to find

Exploration leads to discovery. We uncover something, bring it to light. It was there all along; we simply hadn't noticed it, or seen it for what it was.

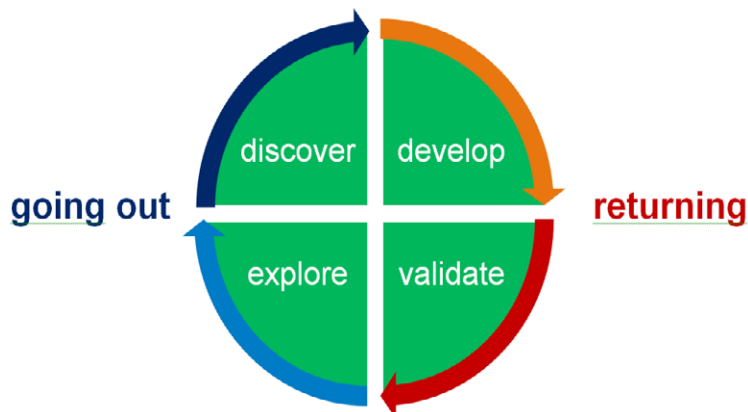
the thing

Creativity, despite what the magicians might tell us, never makes something out of nothing. What we have found is something definite: not vague, insubstantial or ill-defined. It's real.

that society hasn't found yet

Creativity brings back from its exploration something of benefit. We retrieve something that adds value to our work or to our lives: a new product or service, a new theory or design, a hypothesis, an artwork, a new procedure, a new relationship.

Campbell, in fact, has described precisely the cycle of creative thinking that we explored in Chapter 1. It's a journey in two stages: going out, and returning.



2.3 Creativity as competency

What kinds of skills might we need to take the creative journey?

David Perkins thinks he may have the answer.

Perkins is a senior professor of education and co-founder with Howard Gardner of Project Zero, a research project studying cognitive skills among scientists and artists. “The idea that creativity spontaneously bubbles up from a magical well or gains a direct line to the Muses is just another myth among many about highly creative people and their work,” he told Neil McAleer as part of an interview for *Omni* magazine.

“I studied English for 16 years but...
...I finally learned to speak it in just six lessons”
Jane, Chinese architect

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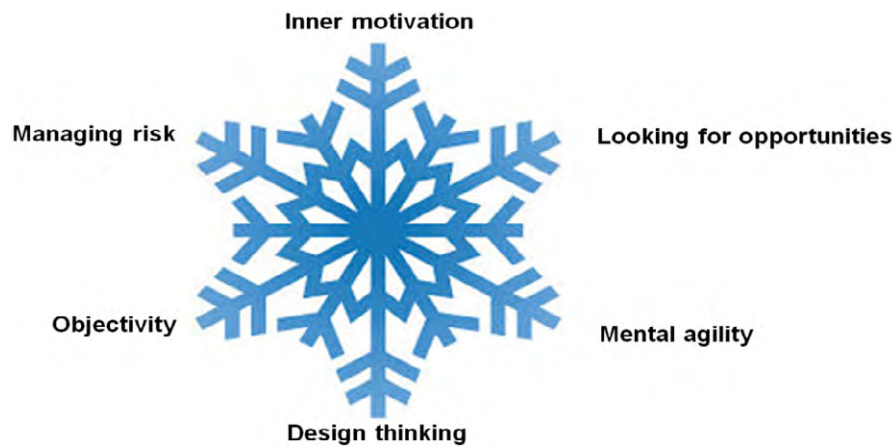


Perkins believes that flashes of inspiration are just a small part of creative work; sustained effort and personal values contribute far more.

We could call this the ‘1% inspiration, 99% perspiration’ view of creativity.

Back in the 1980s, Perkins looked at research data and biographical evidence and identified six related but distinct traits that mark out the creative person. He calls this ‘the snowflake model of creativity’. Creative people might not possess all six, he says; but the more they have, the more creative they tend to be.

The snowflake model has been much quoted and copied. In some cases, I’ve altered the names of Perkins’ traits. For each of the competencies, I’ve listed some questions that you can ask yourself to help you develop your own aptitude in that area.



2.3.1 Inner motivation

The first, and perhaps the most important creative competency, is inner motivation. In creative mode, we ignore pay cheques or qualifications. We’re driven by the challenge of the work itself: by intrinsic enjoyment and satisfaction of creating.

There’s a paradox here. Creating must have a purpose; yet it is its own justification.

We create out of a desire to see the creation brought into existence. Operational thinking relies on external motivators: improving a process *in order to* reduce defects; redesigning a system *in order to* cut costs; and so on. Creative thinking, in contrast, is driven by an intrinsic desire to create.

Words like emotion, love or passion often surface when creative people talk about their work. Creativity comes from a strong inner drive, a personal commitment that arises from an overwhelming inner need.

Inner motivation: the questions to ask

What makes you curious? What makes you ask 'Why?'?

What's really important to you? What's at stake?

Where should you be focusing your thinking?

Where's the real need?

Can you make things urgent for yourself? Can you set yourself deadlines or targets?

What's dissatisfying you? What's irritating you?

What's good about your idea?

How persistent are you? What would help to keep you going?

What excuses are you making for not starting?

Where are the opportunities?

2.3.2 Looking for opportunities

Creatively competent people are good at spotting the opportunities to be creative. In fact, they spend time seeking them out.

Such opportunities can be many and various. You might suddenly spot a niche in the market: the chance to create a new product or service that meets (or even creates) a new customer need. You might take a long time investigating a problem before deciding which path to pursue: the more options available to you, the greater your creative power.

Creativity is as much about looking for problems as solving them. The creative approach involves asking lots of questions. Creative scientists, for example, will ask the questions that nobody else has thought to ask; they know that good questions lead to interesting discoveries. By asking a good question, you might be able to see the current boundaries of your thinking – and break through them.

Looking for opportunities: the questions to ask

- Where's the main chance to do something new?
- Which problem should you be solving?
- Are you overlooking an important issue?
- What other problems relate to this problem?
- Where are the problems hidden below the surface?
- Where else could you go to look for problems?
- How could you slow down and look around more?
- What 'shoulds' are getting in the way of your thinking?
- What rules could you challenge?
- What if...?

2.3.3 Mental agility

The aim of mental agility is to find new ideas. Lots of them.

Mental agility allows us to look at problems differently. Call it mental gymnastics: the ability to think in new directions, from new angles, and with new perspectives. The more richly we can look at something, the more ways we can discover to deal with it.

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Just as gymnastics is made up of different skills, so mental agility involves different disciplines. Associative thinking, for example, looks for connections between things: what's adjacent to it, what's like it, or what's the opposite. Rule reversal looks at the assumptions underlying our thinking about something and challenges them. Problem categorisation defines problems in different ways – so that we can redefine them. And so on.

The challenge that mental agility accepts is the need to find *new* connections between thoughts. It's the new connections that provide the sparks of creative ideas.

Mental agility: the questions to ask

- What does your idea remind you of?
- Are you being too logical? Or not logical enough?
- Can you turn your idea inside out?
- How could you think sideways about this? Or send your thinking backwards?
- What whacky or strange things could you do with your idea?
- How could you exaggerate your idea?
- How could you look at the problems differently?
- How can you change your point of view?
- What the second right answer? And the third?
- How could you generate a random idea to help you think differently?
- How does a recent dream relate to your idea?

2.3.4 Design thinking

Design thinking complements mental agility. Where mental agility craves *newness*, design thinking craves *simplicity*. Design thinking cuts through disorder towards synthesis or resolution.

Creative people love to make patterns. But they also love the tension between the desired pattern and the mess of current reality: they tolerate ambiguity or complexity, in the quest for simplicity, and they work within that tension.

Albert Einstein was apparently once asked why he used hand soap for shaving. “Two soaps?” he replied. “That’s too complicated.”

Design thinking: the questions to ask

What's your idea like?

What patterns can you see around your idea: cycles, sequences, processes, tendencies, shapes, similarities, probabilities?

What are your senses telling you? How does your idea look, taste, smell, feel or sound?

What could you edit out of your idea or project?

Where can you streamline?

How could you make your idea simpler?

What can you rearrange?

What else could you call your idea?

What are your hunches telling you?

How could you be more surprising with your idea?

How would a child look at the problem? Or a film star, a scientist, an athlete, a character from a novel...?

What would a jester, a fool or a comedian say about this idea?

Imagine that you are the idea. How do you feel? How could you make life more comfortable or exciting for yourself?

How would a plant, animal, fish or insect solve the problem?

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2.3.5 Objectivity

The weird ideas of a psychotic may be highly original, but they're hardly creative. Truly creative ideas must have some value or use in the real world.

The genuinely creative person is not a self-absorbed loner; they constantly seek feedback and criticism. We must be able to scrutinise and judge our ideas, and ask others for their opinions. We have to be able to put our ego to one side, listen to advice and test our ideas: in the laboratory, in the field trial, or in the market.

Objectivity: the questions to ask

- What assumptions are you making?
- How does your idea fit into the bigger picture?
- What resources or solutions are right in front of you?
- What parts of your idea are you in love with?
- How would you feel if you lost them?
- Where do you need to conform?
- What could you take less seriously?
- Is the timing right for your idea?
- What's wrong with your idea? Why won't it work?
- What could you do without?
- How can you sell your idea?
- Who is a likely sponsor?
- What negative reactions do you expect? How could you defuse or deflect them?
- Where's your blind spot?

2.3.6 Managing risk

Creative people share a love of risk with daredevils and criminals. They seek danger, excitement and stimulation. They bore easily.

They also accept failure as part of the adventure.

You might think that geniuses come up with brilliant ideas instantly; that they produce only masterpieces; that they always know what they're doing.

Picasso, for example, loved to promote this myth of the spontaneous genius: watch some of the films of him painting on glass on [YouTube](#).

In fact, of the 20,000 or more works he produced, many are not first-rate. Picasso's great genius was for experimentation. He worked at the edge of his competence: in paint, etching, sculpture, ceramics and so much more.

What's your view of risk? Some relish the prospect of venturing into that terra incognita where the possibility of failure lurks. Others see it as a troubling necessity. Whatever our taste, risk-taking is part of the creative enterprise. And taking chances is never easy in organisations. Success may be celebrated; failure is unlikely to be forgotten. And failure can have unintended and unpleasant consequences. So we need to find ways of managing risk.

Managing risk: the questions to ask

Where can you find courage?

What are the possible consequences of your idea?

Where is fear holding you back?

What is worrying you, precisely?

What mistakes might you make? How can you guard against them?

What's the worst that could happen?

How can you manage the possibility of the worst-case scenario?

How could you try out your idea with minimum risk?

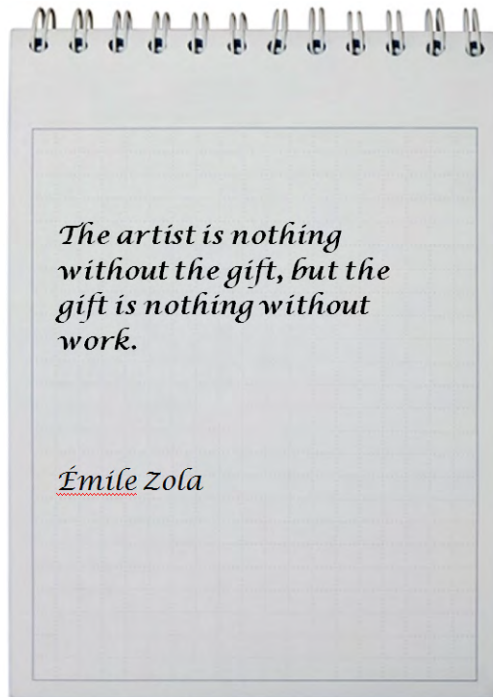
Could you run a pilot?

Can you test your idea in a safe environment?

Does the success of your idea justify the risk?

Creativity, according to this model, is a set of competencies. And all of them have a part to play.

Somebody might be highly skilled in design thinking, for example; but if they're not motivated enough to make their designs concrete, they'll never be able to share their vision. And if they lack the objectivity to see that their idea has no useful meaning or function in the real world, their vision will remain forever inaccessible and incomprehensible.



Creativity, then, isn't a matter of sitting around waiting for inspiration to strike. We have to work at it. And the work itself follows a regular pattern.

An advertisement for BrowserTexting.com. It features a laptop on the left displaying a text message interface with a list of contacts and a conversation with 'Elias Naur'. A blue double-headed arrow points from the laptop to an HTC smartphone on the right, which shows the same text messages. A blue diagonal banner in the top right corner says "FREE 30 days trial!". Below the banner, the text "Go to" is followed by a green button with "BrowserTexting.com". Below the button, it says "and start texting from your computer!". At the bottom right, there is a speech bubble icon with "BrowserTexting" next to it.



2.4 Creativity as practice

Creating is not just a set of competencies or skills. It's a practice. The process that brings something new and valuable into existence is born out of a vision of what we want to create; it continues by developing the craft of creating.

The vital question is: "What do I want to create?"

In this chapter, we've looked at the creative cycle as a journey: a journey that ventures into unknown territory, where the rules of operational thinking don't always apply, and where unconscious activity may be as significant as conscious rational thinking.

We've also identified the six creative competences that we need to take the creative journey. Each has a role to play at some point in the cycle.

1. Choosing to cross into the creative cycle requires **inner motivation**: we want to create for its own sake, not for some kind of external reward.
2. Creativity thrives on **looking for opportunities** to be creative, rather than avoiding them. Creativity is about identifying the goal or vision that we want to attain.
3. Through **mental agility**, we then think richly and variously about our goal and current reality.
4. **Design thinking** develops our idea into a pleasing and convincing solution.
5. And we need **objectivity** to assess how successful and feasible our solution is.
6. Implementing our idea – crossing back into the operational cycle – will require us to **take and manage risks**.

The rest of this book takes you on that creative journey, each chapter helping you to develop your skill in each of these six areas. We'll discover some useful tools and techniques along the way. It's a journey with more than a few surprises.

To quote that great writer and master of creativity, Kurt Vonnegut:

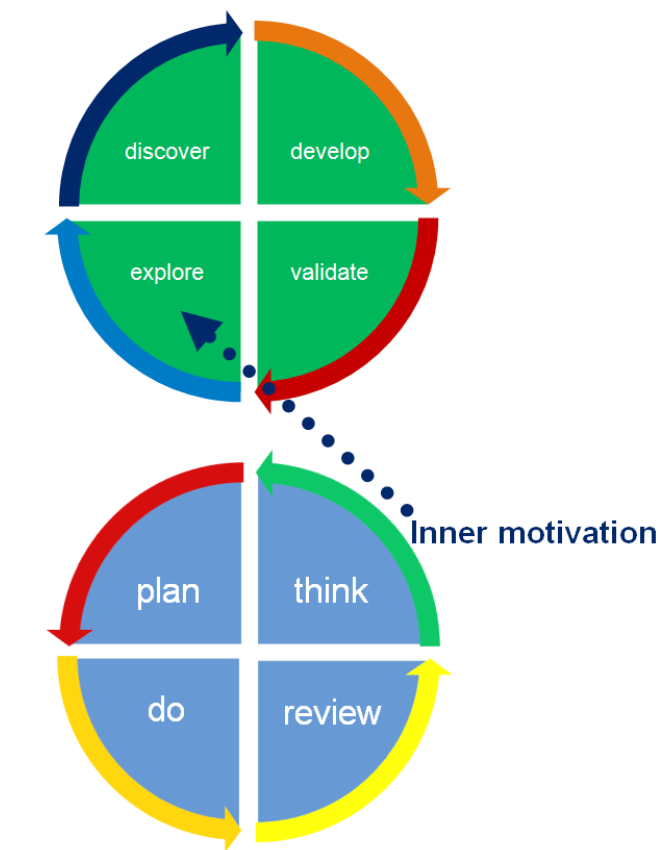
"Keep your hat on. We could wind up miles from here."

3 Inner motivation: the reason for the journey

We take the creative journey for its own sake.

In creative mode, we ignore pay cheques or qualifications. We're driven by the challenge of the work itself: by intrinsic enjoyment and satisfaction of creating. Research by Teresa Amabile, for example, suggests that many operational features of life in organisations can seriously inhibit people's creativity by stifling this sense of intrinsic motivation: performance reviews, excessive supervision, rules and protocols, or restrictions on how to do something.

We don't usually go on the creative journey because of the prospect of operational reward. WE go because we *want* to go. What triggers the journey is inner motivation.



3.1 'Flow'

One name for this sense of inner motivation is 'flow'.

The term was coined by the psychologist Mihály Csíkszentmihályi. (Pronounce his name "chicks send me high-ee.") He wanted to know what makes us happy. He asked: What do we feel when we're happy? Why do some activities make us happy when others don't? How could we increase our stock of happiness?

Csíkszentmihályi studied artists at work, and elderly women in Korea. He observed Navajo shepherds, Japanese teenage motorcycle gang members, and assembly line workers in Chicago.

What motivated all these people was the quality of the experience they had while they worked. That experience had a number of consistent features.

- **Loss of self-consciousness.** We take no account of how others see us. Our attention is solely on the work in hand.
- **Action merges with awareness.** The possibility of failure doesn't occur to us. We simply get on with the job.
- **A distorted sense of time.** We work entirely in the present. As the saying goes, 'time flies when you're having fun.'
- **Intrinsic reward.** We have no interest in compensation or payment.



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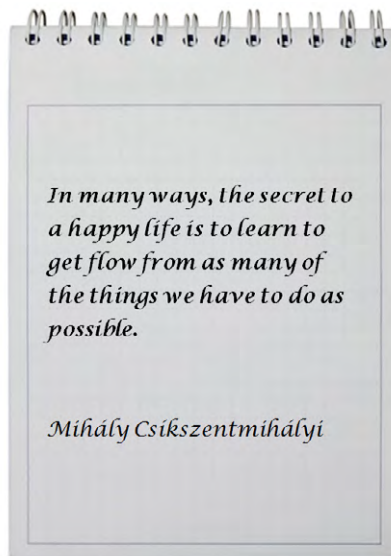
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The experience didn't arise when people were relaxing; and it certainly didn't happen when they were consuming food, alcohol or drugs. Instead, it seemed to require an activity that stretched their capacities; something difficult, risky or even painful.

The task usually involved discovery, novelty or creativity. And it was something people *chose* to do.

Flow is good for us. It produces intense feelings of satisfaction and enjoyment. Flow motivates us to grow in competence and self-esteem. All of which must be good for our health.



3.2 Finding the flow state

How can you develop the flow state: your own sense of inner motivation?

The first thing you need is control over the task. The more the parameters of the task are set for you by someone else – the customer, your manager, an examiner – the less motivated you will feel.

Paradoxically, creativity can be stimulated if you set your own strict rules. Maybe you know that the poem has to be a sonnet, in 14 lines with a strict pattern of rhymes. Maybe you know that the system you're designing has to have four main functions, and no more. Maybe the report has to have five sections, and five only.

If you find yourself thinking like this, you're doing design thinking. And we'll explore that key skill in Chapter 6.

The point here is that, if *you* set the rules, you feel in control – and your inner motivation will survive.

As well as control over the work, you'll probably also need the following.

- **A clear goal.** You know what you want to achieve and you're confident that you can achieve it.
- **Immediate feedback.** You are able to see how well you're doing, so that you can adjust your behaviour quickly.
- **A balance between challenge and skill.** The task feels neither too easy nor too difficult.
- **Concentration.** Your attention is focused exclusively on the task in hand.

All of which might be hard to achieve in the workplace, where operational constraints can interfere mightily. Who is setting the goals? How immediate can the feedback be on your progress? How easy or difficult is the task? Can you really concentrate on this creative endeavour with all your operational responsibilities to attend to?

We can't say this too often: operational and creative work must be separate. And that means, if we want to do creative work *at work*, we need to manage it separately.

Managing creative work

If you are managing others to do a creative task, think about the following.

- Make the project a complete task: from inception to final implementation.
- Gather a team with diverse skills.
- Set a clear deadline. (And, secretly, be ready to extend it.)
- Set a clear budget.
- Provide a vision of the final result, but not detailed specifications.
- Build the team: exercise the skills of creative thinking with them, praise progress.
- Work out a way of piloting or testing the project before it goes live.
- Test the innovation in the marketplace.

4 Exploring the territory: looking for opportunities

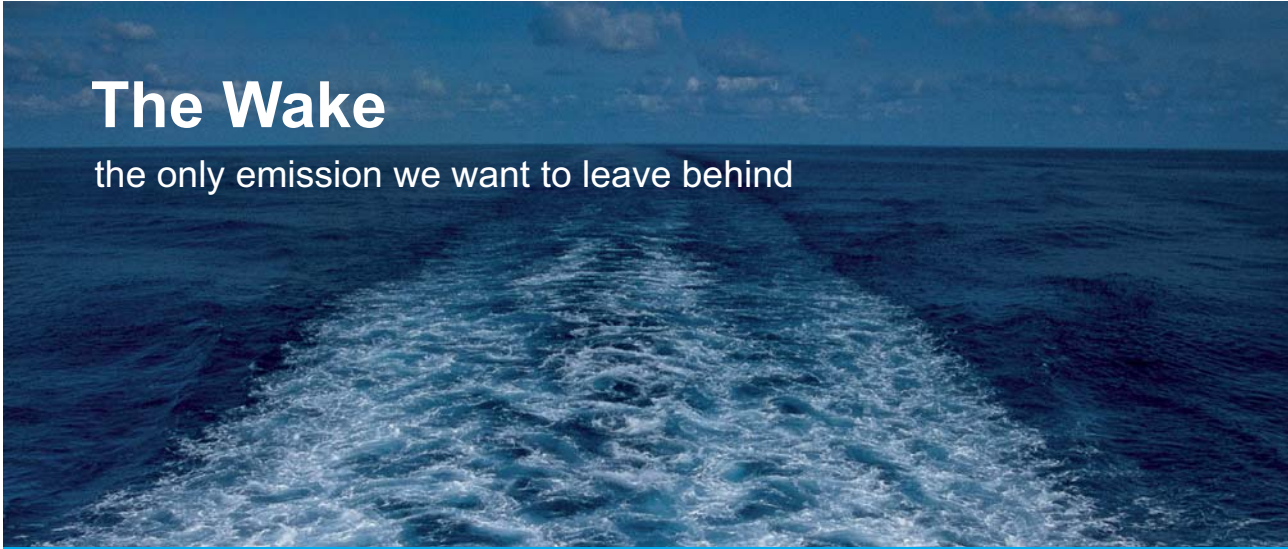
As we saw in Chapter 1, if we want to think creatively, we have to leave the operational cycle and cross into the creative cycle.

We'll make that switch, usually, either:

- because we have to; or
- because we choose to.

In either case, creative people are good at spotting the opportunities to leave operational thinking behind and 'go creative'. It's a skill; and it can be learned.

We start to look for opportunities at a very specific point in the operational cycle. It's at the thinking stage that we can begin to look for them. Looking for opportunities means breaking away from our habits of thinking and starting to explore.




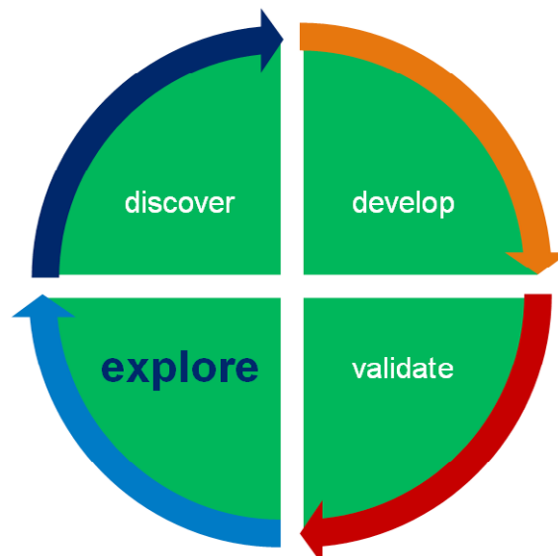
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If you're not a natural explorer, you'll probably only notice creative opportunities when you're *forced* to notice them. Something's gone wrong. Something's not right. There's a gap between what should be happening, and what is happening.

In other words, most creative opportunities start as problems.

4.1 The curse of the right answer

Problems tend to have a bad reputation – especially at work. A problem is something that needs putting right. Which means that something must be wrong. And we intuitively think of 'wrong' as 'bad'. And whatever's bad, somewhere in our unconscious minds, is probably someone's fault.

So, by a process of association, problems at work become highly undesirable. Who wants a fault to be their fault?

As a result, our first and strongest response to most problems is to fix them. To find the right answer.

We all know, of course, that many problems can't be fixed. If an electric light bulb stops working, I can replace it. If the computer crashes, I may be able to repair it.

But sometimes we can't remove the fault without causing further damage (how can we destroy a tumour without destroying healthy tissue, for example?). If we repair a fault, we may cause some other element in the system to fail. Many problems have no single identifiable cause (why does one film flop and another become a global blockbuster?). Many have multiple causes (think about the headaches surrounding company mergers or political unrest).

Sometimes, there's no right answer.

But the urge to look for it is, for many of us, deeply engrained. Or rather, it's programmed in.

We start out in life as curious and creative beings. Look at small children playing: at the boundless potential of their imaginations. Then our parents and carers start saying “no” whenever we don't follow the rules, and so we begin to understand that some things are right, and others are wrong.

School usually reinforces this curse of the right answer in a big way. The smartest child is the one who gives the right answer most quickly. And the right answer is the one that conforms to the teacher's expectations, or the examiner's question.

To slightly adapt a quotation from Roger van Oech, one of the most interesting writers on creativity:

Children enter school as question marks and come out as full stops

When we look for creative opportunities, we're rediscovering our ability to ask questions.

Breaking the curse: how changing the question can open up opportunities

Elad Segev, a lecturer at the Holon Institute of Technology in Israel, has recently posted an interesting experiment on YouTube.

Segev asked a group of youngsters to complete a picture 'the right way' to gain a point. Most children chose the obvious answer (the picture set was a simple triangle, and 80% of the children drew houses), and used on average only two colours.

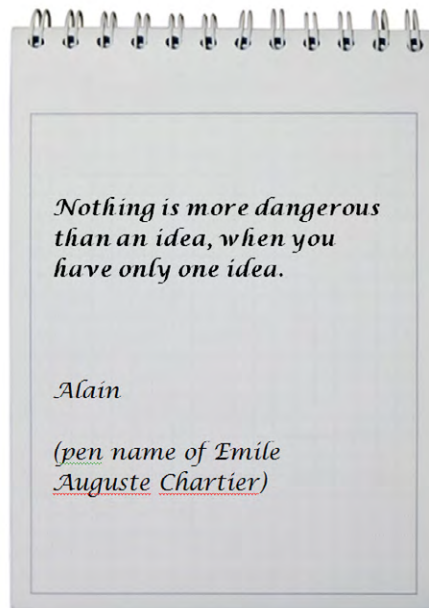
When the instruction became 'Complete the picture' – with no mention of a reward – the pictures became much more creative: none of the children drew houses and the average number of colours used was five.

You can see a short video of his experiment [here](#).

4.2 What do you mean, 'goal orientation'?

The up-market name for opportunity-seeking is **goal orientation**.

Goal orientation looks, not for the right answer, but for a *different* answer. And another answer. In fact, it looks for as many opportunities to be creative as possible. You'll probably find a better solution if you have a range of options to choose from. Instead of stopping at the first acceptable answer – or the answer that all the authorities consider correct – goal orientation asks: why not keep looking?



Goal orientation is a competency: both an attitude of mind and a technique to stimulate that attitude. When we're goal-oriented, we're constantly seeking goals ("what do I want?"), and constantly looking for constraints or obstacles ("what's stopping me from achieving what I want?"). Goal orientation starts with the simple assumption that you're stuck.

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- You own the problem.
- You want to do something about it.
- You don't know what to do.

Why are you stuck? Probably because you're looking at the problem in only one way. Your thinking is being blocked by assumptions. So you need to find a way of breaking out of that stuckness, into the creative cycle.

You need to find a way to challenge your assumptions.

You need to start exploring.

4.3 'How to'

One of the best goal-orientation techniques is also the simplest.

It begins by stating the goal as a 'how to' statement. We can create this statement from scratch, because we choose to.

How to cook the perfect Lamb Pasanda

How to create an entertaining product launch

How to break into the South American market

Or we can create it because we have to. We can take an operational problem and restate it as a 'how to'.

We usually express operational problems as statements of what's wrong. For example:

My client is refusing my proposal.

Suppose we transformed that statement into a 'how to'. We might come up with:

how to convince my client to accept my proposal

'How to' can shift our thinking in rather remarkable ways. In fact, it can feel like magic.

To begin with, we've suddenly shifted our focus from what's wrong to what we can do. We're now involved in the problem rather than simply looking at it.

We're committed to doing something.

(All of which is good for our inner motivation – think back to the last chapter.)

‘How to’ is magical in another way, too. The moment we generate one ‘how to’ statement, others begin to occur to us.

Why ‘convince’? Why not ‘make’ or ‘persuade’?

And then other ‘how to’ statements begin to follow, thick and fast.

- *How to show the client the benefits of my proposal*
- *How to win my client’s confidence*
- *How to compare my proposal to other proposals on my client’s desk*
- *How to make my client feel they’re missing something without my proposal*
- *How to arouse my client’s enthusiasm*
- *How to break down my client’s resistance*

And so on, and so on. ‘How to’ generates multiple possibilities: new ways of thinking about the problem.

And that’s a kind of magic.

Using sticky notes to unstick your thinking

It can be a challenge sometimes managing the wealth of ‘how to’ statements that you generate.

One useful tip is to use sticky notes. As you generate new ‘how to’ statements, put each one on a new sticky note. As the number of ‘how to’ statements increases, you can begin to move the sticky notes around, helping you to see how they relate to each other.

Using sticky notes gives you the freedom to organise and reorganise your ideas as you go. And it often helps you find yet more ‘how to’ statements!

4.4 Shifting perspective

We can develop our goal orientation skills by shifting perspective to find new ‘how to’ statements.

For example, you might decide to create categories and set yourself targets: each category must contain a certain number of ‘how to’ statements. Typical categories might be:

- People
- Systems
- Processes
- Equipment

You might like to shift perspective by looking at the 'how to' in different ways. For example:

- functional aspects (design; production; administration; finance...);
- different points of view (management; technical; customer; political);
- departments affected (functional; divisional; regional);
- reasons for or causes of the problem; or
- chronological stages or process steps in the problem

Alternatively, you might like to map 'how to' statements into networks of relationships, or process diagrams. You could sort them into trees, made up of main ideas and sub-ideas. Often, the principle of organising the 'how to' statements suggests itself as you are working on the problem.

Yet another way to shift perspective is to ask a series of four questions. Each question generates new 'how to' statements, of different kinds.

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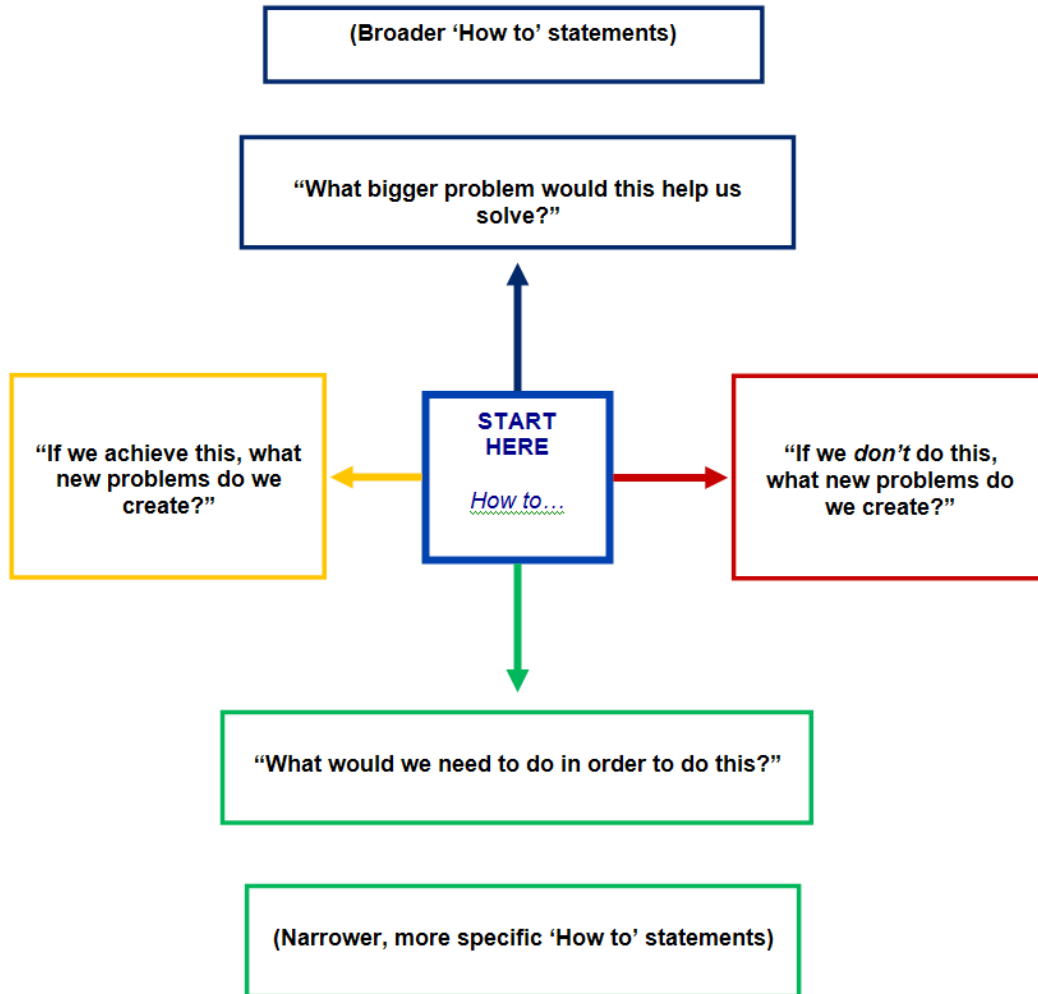
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- ***What bigger problem would this help us solve?***

In this shift, we assume that the problem is a solution. We can then ask two questions.

- What higher-level problem would it solve?
- What benefits would this solution bring?

These are effectively variants of the same question, but it helps to consider them separately.

The answers in this perspective shift will be broader, more strategic problems. And those might be just the kind of 'how to' statements that will stimulate more creative thinking.

- ***What would we need to do in order to do this?***

This shift, unsurprisingly, takes us in the opposite direction.

Instead of assuming that the problem is a solution, we ask what we would need to do in order to achieve the solution.

The answers will tend to be more tactical and practical. Each one is potentially part of a plan to tackle the original 'how to'. In fact, shifting perspective downwards is the most obvious way to create a plan of action: which might be what we are looking for in the operational cycle (the stage after 'thinking' is 'planning', after all.)

- ***If we achieve this, what new problems do we create?***

All solutions have consequences. Some of them may be undesirable. By shifting perspective in this direction, we may be able to foresee some of those problems and plan to manage or avoid them.

- ***If we don't do this, what new problems do we create?***

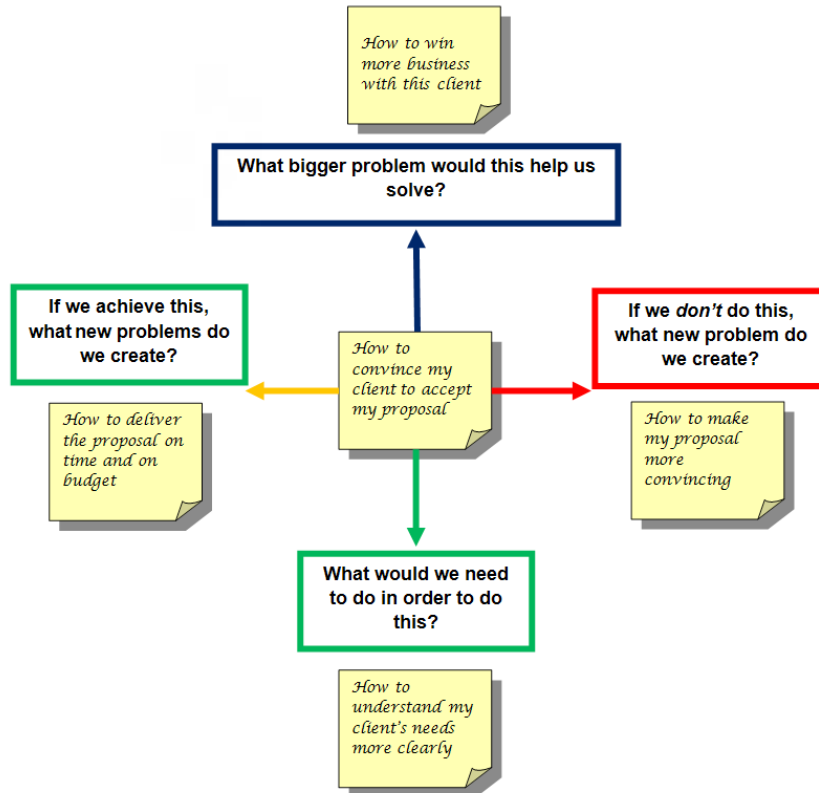
In this shift, we consider the consequences of *not* doing what we are thinking about. What problems would we face – new or already existing?

These new ideas are potentially extremely useful in developing contingency or protective measures to make our plan more robust.

Here's an example of shifting perspective, based on that 'how to' statement we looked at just now:

how to convince my client to accept my proposal

I've included just one new 'how to' statement for each shift of perspective. In reality, of course, you will be able to generate many new 'how to' statements for each.



You'll need to pick a new 'how to' at some point, to take forward on your creative journey.

The best 'how to' for creative work will be one that *excites* and *intrigues* you. Pick the 'how to' that makes you think: "Yes, I *really* want to do that. I could really commit to that. And it intrigues me: I don't quite know *how* to do it, but I'd like to find out."

Sometimes, you'll need to search for that special 'how to' statement. More often than not, it will leap out at you. You'll know it when you see it.

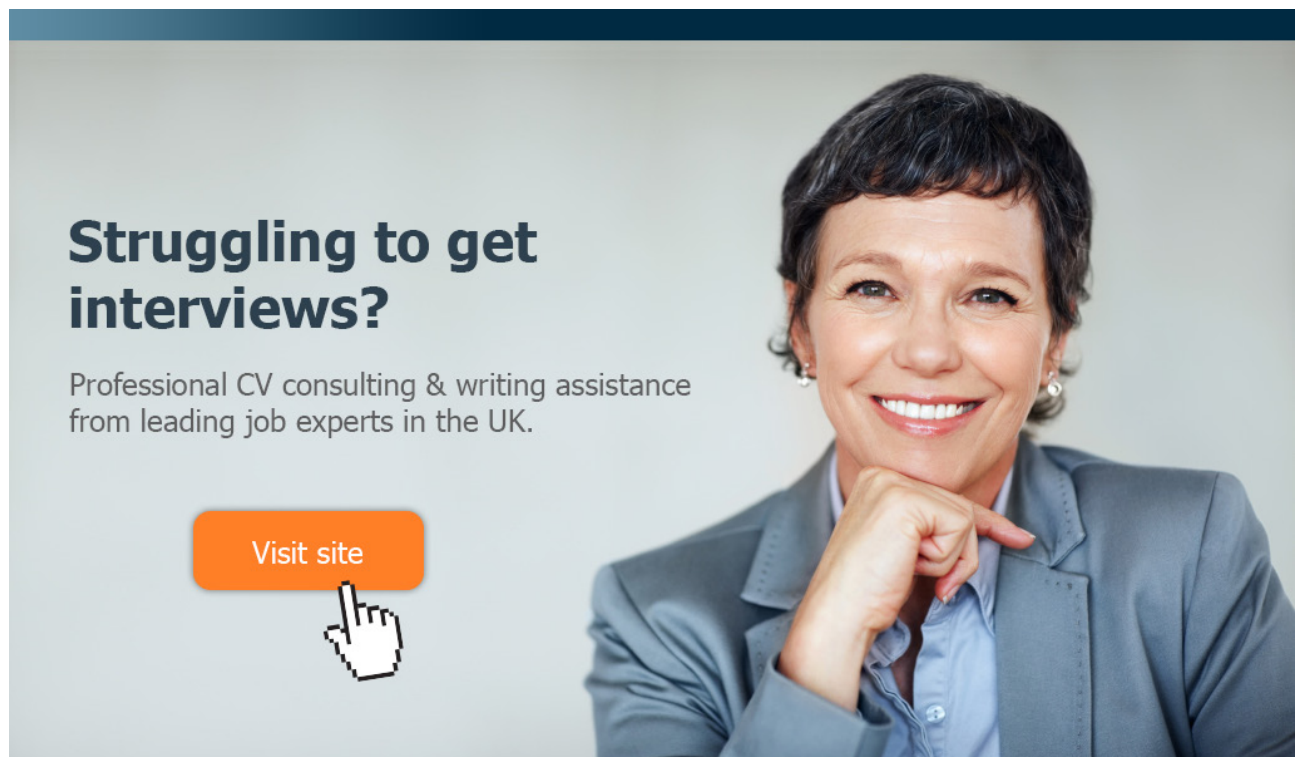
And once you've found it, you'll be ready to move on the next stage in your creative journey.

5 Discovering new ideas: mental agility

Creative people are able to think about things in different ways. They're mentally agile.

Mental agility is essentially the ability to *look* at something differently. By looking at a problem, for example, from a different angle, or taking a different perspective on it, we discover more about it. And the more richly we can think about it, the better prepared we are to deal with it.

Mental agility helps us find new ideas. That's why it's so vital at the second stage of the creative journey: discovery.



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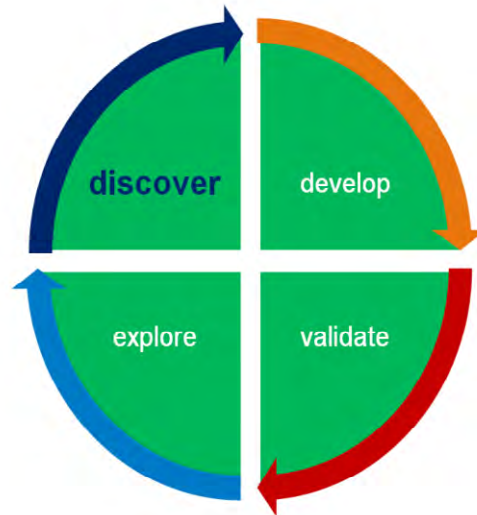


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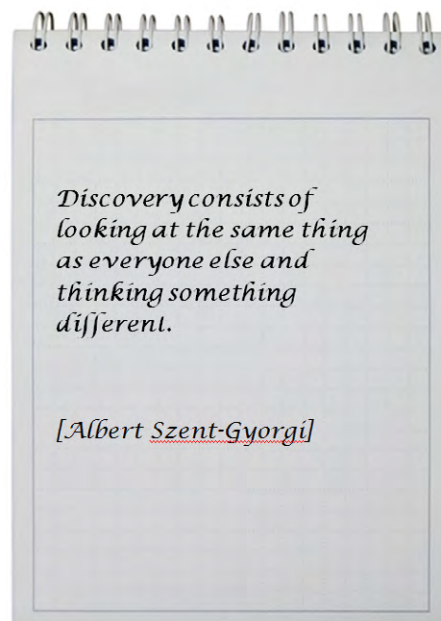


5.1 From 'how to' to 'how about'

Why develop mental agility?

We're looking for different ways of doing something. In the last chapter, we explored different ways of expressing the problem or challenge: different 'how to' statements that allowed us to look at the problem in new ways. Now we're looking for new and different ways of tackling or achieving the 'how to' that we chose at the end of the last chapter.

The aim of the exercise is move from 'how to' to 'how about'.



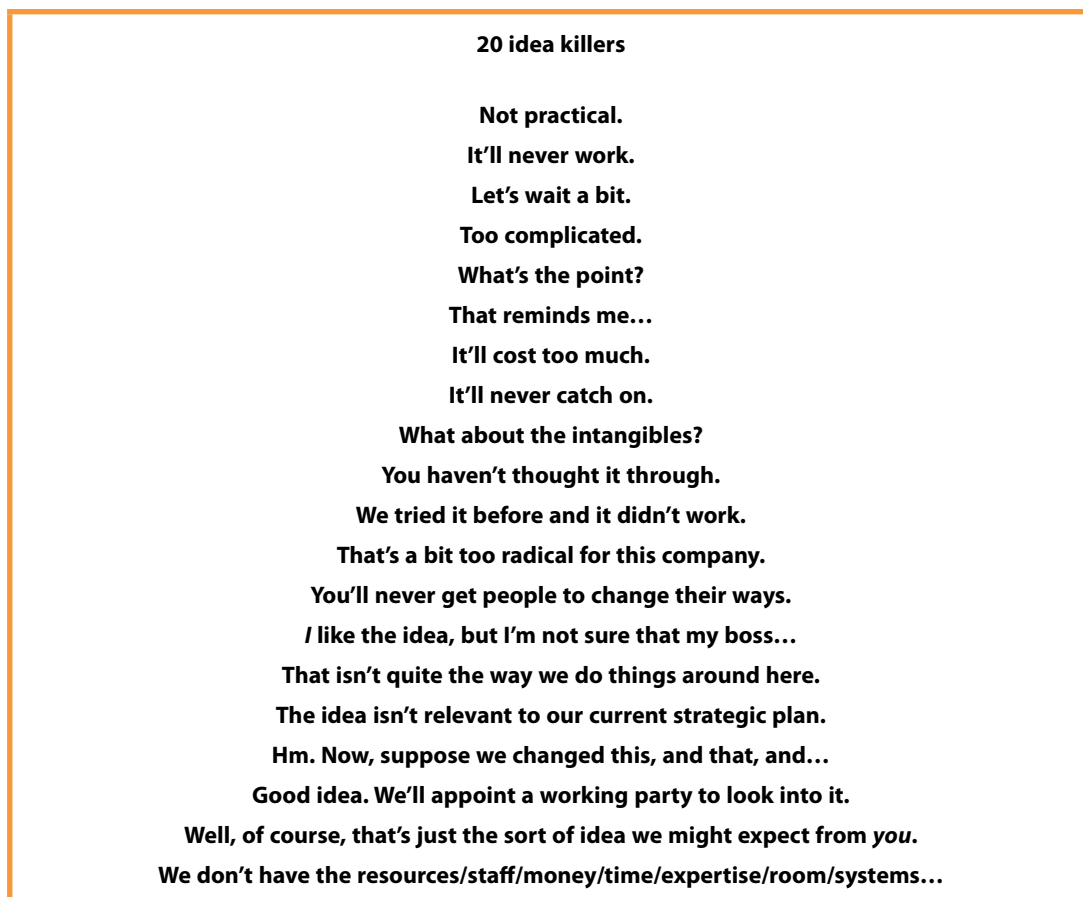
The danger, as so often during the creative journey, is that we might collapse back into operational thinking. The moment we start to think about what to do, we become prey to one of the most deadly beasts in the creative jungle.

We call them idea killers.

Idea killers are negative operational responses to creative ideas. We've all heard them. We've probably all used them, time and again. Idea killers are comments like:

- *That doesn't make any sense.*
- *It won't work.*
- *We tried that before and it failed.*

These comments might be valid – operationally – but they can be fatal when we're looking for new ideas. We have to put ourselves on guard for them and make sure that they don't damage our creative thinking.



We're not looking for the operationally correct course of action. We're looking for a *different* course of action: a course of action that nobody has tried yet.

We're looking for new ideas. And ideas happen inside our heads. Hence the term: mental agility.

To become more mentally agile is to develop our powers of thinking.

That might seem a bit scary. After all, few of us have been trained to think. At school we're taught history or geography or mathematics; but we're not taught to think. 'Thinking' is not a subject on the curriculum. As a result, thinking has acquired a strange reputation. Fast thinking, for example, is generally regarded as superior to slow thinking. And logical thinking is prized above creative thinking.

So, before we go any further, let's dispel a few myths about thinking.

5.2 Thinking about thinking

First, four things that thinking isn't.

Thinking isn't intelligence. We tend to equate effective thinking with high intelligence. But the two are different. Thinking unintelligently may still achieve a result. Intelligence without thinking is useless. (It's worth pointing out, also, that 'intelligence' is not a single quality. All of us possess multiple intelligences. The key to our success as humans is not our higher intelligence than other animals, but our ability *to use* all our intelligences.)

Thinking isn't a function of education. We all know people who may not have enjoyed 'a good education' but who think well, and wisely. And we can probably all think of a few 'highly educated' people who are hopeless thinkers.

Thinking isn't the accumulation of information. We certainly need information to think well: information is the raw material of thinking. But simply increasing information is not thinking; it's simply hoarding. Too much information can seriously hamper our ability to think well.

Thinking isn't just the operation of logic. We tend to associate 'thinking' with two forms of reasoning. Deductive reasoning derives a conclusion from general statements; inductive reasoning from specific examples.

Thinking is far, far more than logic. What are you doing when you prioritise, clarify your objectives, assess alternatives, imagine consequences or seek other people's opinions? You're thinking, of course. And thinking involves perceiving, interpreting, translating, transforming, choosing, designing, evaluating – and even having hunches.

In other words: thinking is a set of skills.

Every thinking skill is based on a single mental operation: the ability of the mind to make *connections* between things. Mental agility, at its simplest, is the skill of making *new connections*.

5.3 A short history of associative thinking

The fancy name for this ability to make mental connections is ‘associative thinking’.

We link items in our minds by making associations with them. We usually link items in three ways:

- similarity
- closeness
- opposition

For example, we might link the word ‘table’ to the words:

- shelf (similar);
- chair (closeness); or
- pit (opposition).



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Notice that the connections we made just now are based on connections that the mind has already made. They're not new. Some kinds of links are easier to find than others. (What's the opposite of a chair?) That doesn't really matter. Associative thinking is simply looking for connections: any connections, not the right connections.

Associative thinking is absolutely not concerned with finding the right connections. Just useful ones.

The mind grows networks of connections over time: from the moment we're born we start to connect things in our heads, and we continue to expand those networks throughout our lives. The connections that we find useful tend to grow stronger; the connections that we don't use wither away. That's how mindsets are created. (We looked at mindsets in Chapter 1.)

But the mind never loses its talent for making new connections. Given the chance, it can connect anything to anything.

Don't believe me?

Try it.

Let's generate some words at random. The easiest way to do that, if you've access to the internet, is to find a random word generator. There's a good one [here](#). Alternatively, key the phrase 'random word generator' into your search engine and you'll soon find one. (If you've not got internet access right now, simply find a book, or a magazine, or a newspaper, and pick the first two words that you see.)

I'll generate two words at random. What are the connections?

pill
saviour

That seems too easy. We regard pills too often as saviours when we're not feeling too well, perhaps.

brooch
spark

Far too easy! Ok: over to you. Try this a few more times, and you'll soon experience the thrills of associative thinking.

Archimedes in the bath

The most famous example of creativity born out of new mental connections is probably the tale of Archimedes in the bath.

Archimedes of Syracuse (c 287 BCE–c 212 BCE) was one of the great scientists of his age. At the time our story begins, King Hiero II of Syracuse had donated pure gold to make a crown. The king suspected that an unscrupulous goldsmith had adulterated the gold with silver; he asked Archimedes to find out if the crown was indeed pure gold.

Archimedes knew that impure gold has a lower density than pure gold. Density is weight per unit volume; and Archimedes knew the density of pure gold. He could easily weigh the crown; all he needed to do was calculate its volume.

How to work out the volume of an extremely irregular solid like an intricately moulded crown?

Archimedes was stuck.

He took a break. He visited the local baths. And, as sank into the warm water, he noticed that his own irregularly shaped body displaced its own volume of water. He could do the same with the crown! Measure the volume of the water displaced, and it would be the same as the volume of the crown.

So thrilled was Archimedes by this discovery that he leapt from his bath and ran naked through the streets, crying "Eureka!" (Greek for "I've found it!").

And – yes – the goldsmith had indeed added silver to the gold. What happened to him is unrecorded.

The story of Archimedes has become the classic example of creative thinking triggered by a lucky new mental connection.

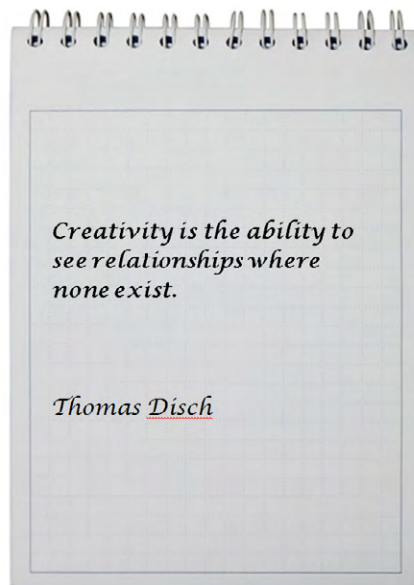
Over two thousand years after Archimedes' discovery, an educationalist called Graham Wallas codified the process into a four-part model, which has become very well known. In his 1926 book, *The Art of Thought*, Wallas called these four stages:

1. **preparation** (conscious work on a problem: defining it, observing it, studying it);
2. **incubation** (laying the issue aside: the problem sinks into the unconscious, which processes it);
3. **illumination** (a new idea emerges – often dramatically or unexpectedly: the 'eureka' moment); and
4. **verification** (checking that the illumination is valid and then developing it into a workable solution).

Wallas's model has been enormously influential. For a start, it seems to describe a very familiar experience: the way ideas pop into our minds unbidden, or arise after periods of mental rest (sleep, perhaps, or exercise). Wallas's model also plays to the magical view of creativity; all that incubation happens deep in the unconscious, which makes new creative connections without our being aware of them.

But notice that Wallas complements intuitive, unconscious link-making with conscious, rational thinking. Stage one – preparation – is purposeful; stage four – verification – engages critical thinking and deliberate evaluation. Creative thinkers study and analyse; but they also train themselves to notice what others miss. They expect surprises and hold off judgement.

They're mentally agile.



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In the decades since Wallas published his model, other thinkers have investigated the power of associative thinking to stimulate creativity.

Probably the most influential has been Edward de Bono. De Bono first used the term 'lateral thinking' in the mid-1960s, and the phrase is now in the dictionary.

De Bono distinguishes lateral thinking from what he calls 'vertical thinking'.

- **Vertical thinking** looks for the correct answer. We have to correct at every stage in order to be correct at the end.

Vertical thinking is like climbing a ladder. You have to stay on the ladder in order to get to the top: the correct answer.

Doing a sum is a classic example of vertical thinking.

- **Lateral thinking** looks for a *different* answer. We don't have to be correct at every stage in lateral thinking, because we're not looking for the correct answer.

Lateral thinking is like using stepping stones. You use whatever stones are available to keep moving; to take your thinking somewhere else.

Finding the connections between two unrelated objects or words is a classic example of lateral thinking.

Most creativity techniques use lateral thinking in one way or another. Broadly, these techniques fall into two categories: techniques involving **metaphor** (looking for similarities and closeness); and techniques involving **reversal** (looking for opposites).

5.4 Metaphorical thinking

What have the following all got in common?

A hive of activity

An industry watchdog

The University of Life

The ship of state

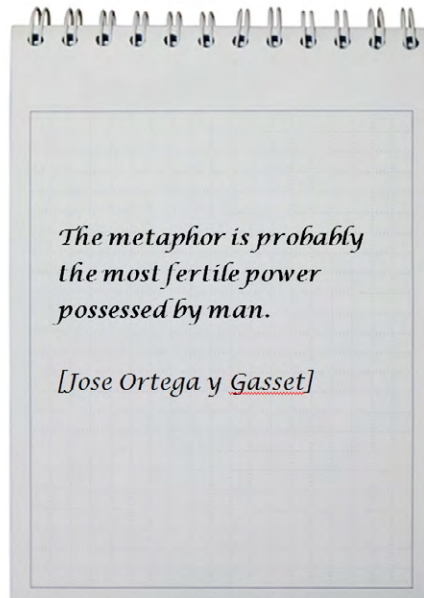
Cashflow

A ribbon development

A cast-iron guarantee

The answer, of course, is that they're all metaphors.

A metaphor helps us think about something *in terms of* something else. It makes for mental agility.



One way to make our thinking more metaphorical is to place our 'how to' statement in a different world. We might categorise these worlds broadly as 'organic' and 'inorganic'. The metaphors will get more interesting if we pick worlds from the opposite list to the one in which we might place the 'how to' statement.

And those metaphors will help us find new and intriguing 'how about' statements: suggestions for tackling or achieving the 'how to'.

For example, if the 'how to' is:

how to respond more positively to customer complaints

– we'd probably place that statement in the 'organic' category. Pick a metaphor from the 'inorganic' list and see what ideas occur to you. For example: suppose our organisation were a galaxy of stars?

how to respond more positively to customer complaints

>>

How about creating a membership organisation or customer loyalty group?

And if the 'how to' is 'inorganic':

how to redesign the delivery of catering in the aircraft cabin

– we might explore an 'organic' metaphor. Suppose the catering trolley were an animal?

how to redesign the delivery of catering in the aircraft cabin

>>

How about 'smelling out' passengers' requirements more effectively: anticipating or pre-planning delivery of catering?

Switching radically between worlds can provide more interesting and provocative metaphors.

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New worlds for old	
Use this list of virtual worlds to find new and unusual metaphors for your chosen 'how to' statement.	
Organic	Inorganic
Biology	Physics
Tribal customs	Mineralogy
Sports	Woodworking
Fashion	Chemistry
Dancing	Mathematics
War	Electricity
History	Astronomy
Mythology	Machines
Botany	Rocks
Philosophy	Metalworking
Theatre	Oceanography
Education	Geology
Animals	Architecture
Politics	Meteorology
Racing	Bridges
Espionage	Aeronautics
Comedy	Transport
Agriculture	Acoustics
Finance	Archaeology
Science Fiction	Time and space

5.5 Using an oracle

An oracle is a lateral thinking tool.

We use oracles to gain new insights. We read our horoscopes. We shuffle Tarot cards and throw dice. In ancient times, people visited oracles in places like Delphi, where priests or priestesses would utter strange pronouncements in answer to their questions.

Oracles use randomly generated information to help us make new connections and reframe. The random element forces us out of our usual channels of thinking. It disrupts our mindsets. It helps us discover new ideas.

The easiest way to make your own oracle is to use randomly generated words. Use the random word generator that you discovered on the internet a bit earlier: the generator will offer you randomly selected words that you can juxtapose against a problem to stimulate new ideas.

For example, suppose the problem is:

how to encourage my team to be more creative

I generated four words on a random word generator.

kidney: how about filtering the administrative, routine activities out and focusing on the team's really important work?

radar: how about encouraging the team to explore their operating environment more fully, to find more opportunities for creative work?

joke: how about using humour or random juxtapositions as a means of generating new ideas?

ink: how about categorising the team's work in different colours, to help us develop them in new ways?

The best words for this kind of associative thinking are concrete nouns: words that name things physically present in the world. Concrete nouns stimulate our imagination with images, and the images create powerful sparks. Words like 'finance', 'planning' or 'region' aren't likely to be so rich in associations.

5.6 Reversal and assumption challenge

A second set of techniques uses the idea of *reversal* to give our thinking a lateral nudge.

Reversal means turning a 'how to' statement inside out, upside down or back to front. If we challenge the assumptions underlying our thinking, or deliberately imagine the direct opposite of what we want to achieve, we may find new ways of thinking about it.

For example, if we were considering 'how to improve customer satisfaction with our helpline', we might start to generate new 'how to' statements that are deliberately the *reverse* of what we want to achieve:

How to reduce customer satisfaction with our helpline

How to scare our customers

How to be as unhelpful as possible

And so on.

Such crazy ideas may hold within them the seeds of a new idea. For example:

How to reduce customer satisfaction with our helpline: *how about giving customers more information so that they need to ring the helpline less?*

How to scare our customers: *how about explaining more clearly to customers the consequences of doing something wrong?*

***How to be as unhelpful as possible:** how about focusing more on the diagnostic stage of a customer call, before leaping to suggestions for help?*

The reversal technique generates what Edward de Bono calls ‘intermediate impossibles.’ The ideas are as *impossible* as we can imagine; and they act as intermediate stages on the lateral journey from ‘how to’ to ‘how about.’

You might find reversal a tricky technique to master. With practice, however, it can become great fun. Thinking up the most outrageous negative ideas can truly liberate your thinking. (The key, in my experience, is to go for an idea that offends the rules of physics).

Mental agility helps us generate lots of ideas. Whether we’re using metaphors or by consulting an oracle that generates random information; whether we’re challenging our assumptions or generating intermediate impossible; by becoming more mentally agile, we increase our range of options for action.

That ‘how to’ statement becomes a cluster of potential ‘how about’ statements.

At the next stage of the creative journey, we start to put some of those ideas to work. We begin to develop a solution.



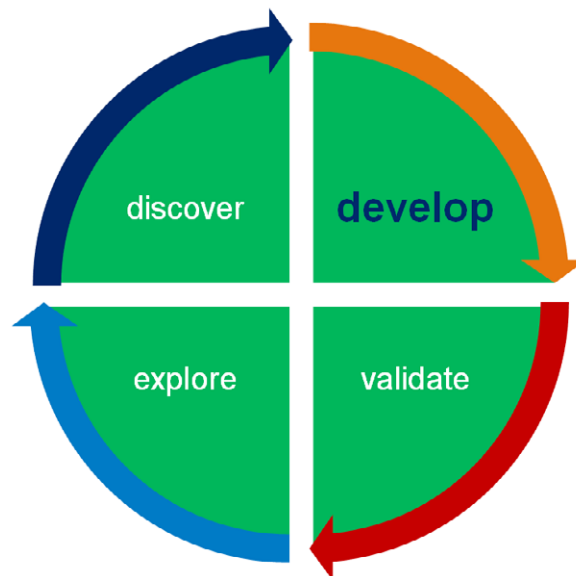
6 Developing your ideas: design thinking

Design thinking transforms ideas into workable solutions.

Design thinking complements mental agility, the creative competence we explored in the last chapter. Mental agility helps us generate new ideas, and lots of them. Design thinking helps us organise new ideas into a single, elegant solution.

Mental agility looks for newness; design thinking looks for simplicity.

We're at the third stage of the creative journey. So far, we have identified what we want to achieve ('how to') and generated lots of ideas for achieving it ('how about'). Now, using design thinking, we develop our new ideas into a sol



So what exactly is design thinking? And how do we do it?

Do it yourself

Here's an exercise for you.

Take a blank piece of paper – at least A4 size – and your wallet or purse. Put the blank piece of paper on the table and look at it.

Now take everything out of your wallet or purse. You'll need at least ten objects.

You're going to make an assemblage on the blank piece of paper, using the objects from your wallet or purse. You can use only the objects you have, but you don't have to use all of them.

You have three minutes.

Don't read on until you've finished.

Ready?

Go!

What you've just done is design thinking.

Did you like the assemblage you created? Most people who do this exercise say that they are quite proud of what they've created. But maybe you felt you could do better. Maybe you'd like to try again. That's good. 'Back to the drawing board' is a key element of design thinking.

How did you feel while you were doing the task? Many people say that they felt increasingly involved and energised; that it triggered something like the 'flow' state of inner motivation that we explored in Chapter 3.

And what did you actually do?

My guess is that you went about the task in one of two ways.

- Perhaps you stared at the paper for a short while and formed some kind of general design in your head. Then you began to use the objects to move towards that 'ideal' design.

We could call this the 'composing' approach. It's like a composer working at the desk, scoring a piece of music before distributing it to the band or the orchestra.

- Or perhaps you started out by playing with the objects: moving them around, combining them in different ways, and seeing what happened.

We could call this the 'improvising' approach. It's like a folk or jazz musician picking up an instrument and creating a piece out of scales, chords and riffs.

And maybe you did a bit of both: a bit of composing and a bit of improvising.

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6.1 Design thinking and analytical thinking

Design thinking differs radically from analytical thinking.

For a start, analytical thinking thinks backwards: it starts with a problem. Design thinking thinks forwards: it aims at a solution. Analytical thinking is all about understanding the problem more fully; design thinking tries to create a more effective solution. Analytical thinking typically breaks a problem into its constituent parts; design thinking typically assembles components into a solution.

The two styles of thinking also demand different skills and different questions. When we think analytically, we look for a gap between what is and what *should* be. When we do design thinking, the gap is between what is and what *could* be.

Above all, analytical thinking and design thinking are looking for different kinds of answer.

Analytical thinking seeks the right answer. Design thinking seeks a more elegant answer.



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6.2 The five stages of design thinking

Design thinking uses five steps. We've already looked at steps 1 and 2.

1. *Express the problem as a 'how to' statement*

The way we express the problem is critically important. And we need to express it in a form that's conducive to design thinking. 'How to' is just perfect for the task.

2. *Generate lots of ideas: 'how about' statements*

Design thinking demands new ideas. No matter how obviously right an old solution might seem, creativity needs different solutions. And the more the better. Mental agility is the name of the game here.

3. *Refine ideas*

Now, we move on. At Step 3, we need to take a handful of the most promising potential solutions and work them out in more detail.

We need to make our ideas practical and realistic. How do we do that? We might combine elements from different solutions, or transfer elements from one to another. We might pilot a solution and see how it works.

4. *Repeat stages 2 and 3*

Design thinking is often iterative. Piloting a solution may show that elements need to be redesigned, or thought through afresh. 'Back to the drawing board', indeed. A pilot may also reveal important aspects of the original problem that were previously hidden.

5. *Pick the winning solution and implement it*

Once we know which solution to carry out, we need to set up the plan to implement it.

And guess what? Implementation may throw up new problems requiring more design thinking.

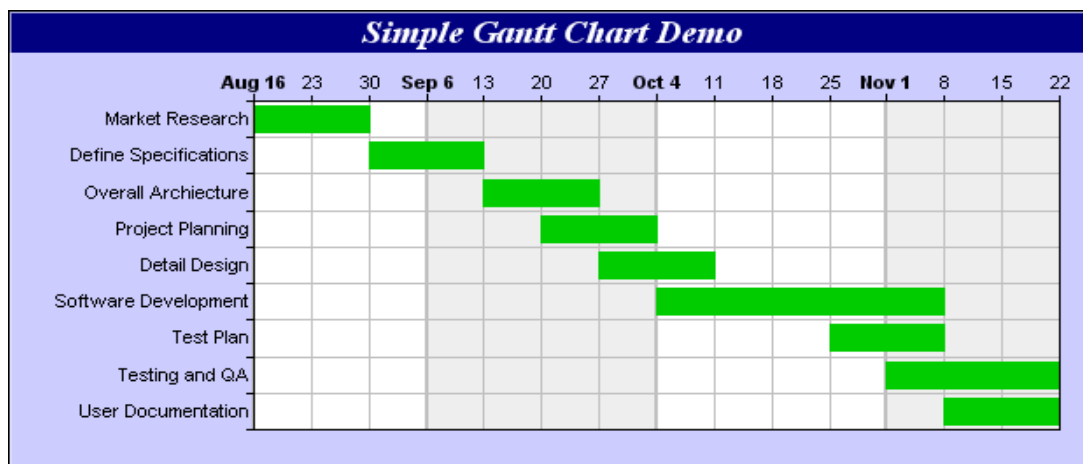
So it goes.

6.3 Opportunity-led planning

Planning, they say, is the process of preparing, making and managing change. Having picked a goal (the 'how about' you're going to pursue), the next step is to plan a route from where you are to where you want to be. The plan you create is the set of activities that will help you realise your goal.

The standard advice about planning is to work backwards from your goal. What we should do, we're told, is create a 'waterfall': a neat, linear sequence of stages, each of which we need to complete before setting to work on the next.

The waterfall has become a fairly standard model for projects of all sorts. Every Gantt chart is evidence of waterfall planning at work.

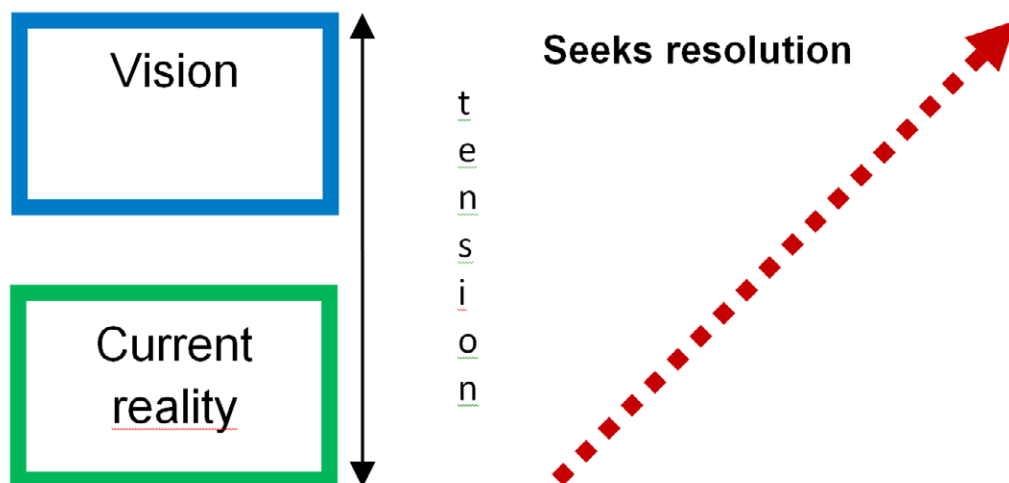


The problem is that the waterfall model doesn't really reflect the way we design things.

Think back to making your assemblage. Did you follow the waterfall model? How much did you design in your head before putting the pieces together?

My guess is that your thinking worked rather differently. You were negotiating in your mind between what you wanted to achieve, and what you could do.

Whenever we're creating something new, we have one eye on what we want to create, and another on what we have, and what we can do. The gap between the two creates a tension that we try to resolve by taking action.



What we do is look for *opportunities to resolve the tension*.

It's called 'opportunity-led' planning.

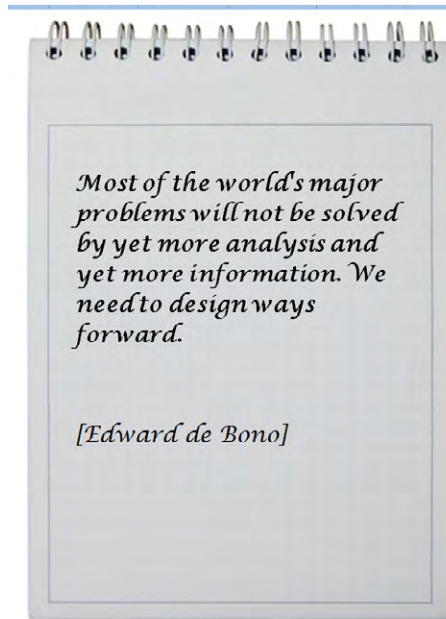
We create possible solutions and see how they might work. We then adjust our search on the basis of what we find. All the time, we're looking for the places where we can make headway: backing up when we meet a dead end, pushing forwards when we can.

Opportunity-led planning can seem pretty chaotic when we're in the midst of it. But in fact, it's very well organised: we're switching our focus of attention systematically between our vision and current reality: between what we want and what we've got.

The key is to exercise dynamic control. It's not the control of a driver handling a machine; it's more like the control of a surfer riding a wave. We're trying to balance forces and look for the way forward.

6.4 Design thinking at work

Design thinking is an increasingly vital skill. Unfortunately, it's not a skill we are much taught at school. Education tends to emphasise knowledge over action, and truth over possibility. Yet progress has nearly always been the result of people imagining what might be.



If you want to integrate design thinking into your own work, here are ten ideas that you could try out.

Synthesise. Look for connections, similarities and analogies. Explore how you could use information in new ways.

A large rectangular advertisement with a white background. In the center, a circular splash of clear blue water forms a ring. Inside the ring, the text "360° thinking." is written in a blue serif font. In the bottom right corner, the Deloitte logo is displayed in blue, with a small green dot at the end of the word "Deloitte". Below the logo, the text "© Deloitte & Touche LLP and affiliated entities." is written in a small, gray font. In the bottom left corner, the text "Discover the truth at www.deloitte.ca/careers" is written in a blue serif font.

Learn how to learn (fast). Information overload is here to stay. Schedule your day to include ‘absorption time’.

Always have a long-term plan. The best reason for making a plan is so that you *can* revise it.

Plan flexibly. Back up, change course, look for the opportunities to act. Keep your long-term goal in mind.

Map connections. Draw all your plans on a large piece of paper. Link the dependencies (what plan depends on achieving another plan). Identify the plans with the least dependencies and concentrate on them.

Collaborate. You’ll almost certainly depend on others to achieve your plans. Nurture the useful working relationships; think of them like bank accounts and put as much credit into them as you can.

Make mistakes, and make them fast. Opportunity-led planning learns from its mistakes, and its failures. Everything’s useful.

Keep everything. Document what works. Write up protocols of best practice. Keep early drafts; throw nothing away. You never know when you might need it.

Recycle. There’s only so much time and energy available for invention. If you can use something you created a while back, do so.

Seek simplicity. If it looks complicated, then it will be complicated for others. Look for a dozen ways to make it simpler. You’ll save time later; it’ll work better; and the world will be a better place for it.

7 Validating your solution: objectivity

Truly creative people live in the real world. Creativity isn't just a matter of having ideas; it also means *implementing* them. If our ideas don't become useful products, services or procedures, then they remain fantasies. If creativity doesn't bring real benefits for our organisation, for our customers, and for society, then it has no value.

Objectivity is the skill of examining our proposal and validating it.



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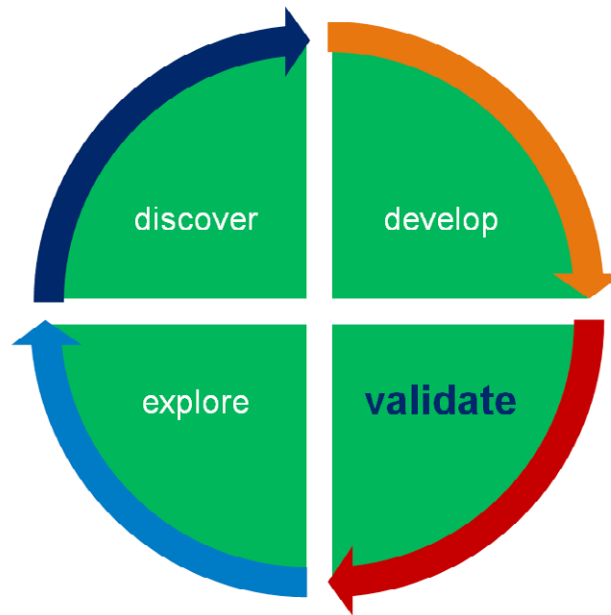
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At this point in the creative journey, when we're returning towards the operational world, we need to examine our ideas, and our solutions, as rigorously and as coolly as we can.

That's not easy.

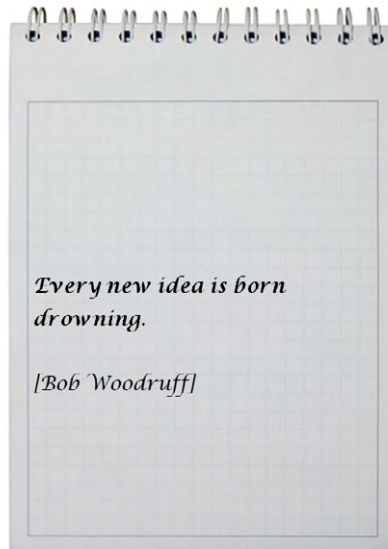
Imagination has to give way to critical evaluation; we have to counter our love for our new ideas and our almost inevitable biases in favour of them.

That's why these two chapters include a lot of checklists. Checklists are essential tools in developing our objectivity. They help us to think more systematically, navigate complex information more easily and keep our focus on our intended outcome. They also act as counterweights to any intuitive biases that may be influencing our thinking.

So don't ignore the checklists. They're there to help you!

7.1 Building feasibility

We need to build feasibility into our solution if it's to have a chance of survival in the real, operational world. Any new ideas that we discover are likely to be fragile; after all, if an idea were obviously practical, someone would have already thought of it.



The first step in evaluating our solution is to examine it from the point of view of the user: the people who will use it or benefit from it. One simple way to evaluate it is to look at the positive, negative and interesting aspects of the solution, systematically. Edward de Bono calls this 'PMI analysis'; it's an example of what he calls a 'directed attention thinking tool'.

- Identifying the positive aspects of our solution will strengthen it and make it more credible when we have to promote it to others (many of whom, in traditional operational mode, will probably be all too willing to criticise it).
- Looking for the negative features will give us the opportunity to work on them, develop or eliminate them – perhaps before we implement the solution.
- And assessing what's interesting about our solution will reveal its potential impact: we can begin to think about the challenges of implementing it, and other opportunities for putting it to work.

PMI analysis: the questions to ask**Positive aspects**

What's attractive about this solution?

What benefits would it bring?

What benefits derive from the immediate benefits?

How else could we achieve those benefits?

Negative aspects

What are the weaknesses in this solution?

What shortcomings can we identify?

What about the risks?

What's dangerous about this solution?

How can we mitigate the risks?

How can we transform weaknesses into strengths?

Interesting aspects

What are the implications of this solution?

What are the consequences of implementing it?

Who will be affected by the solution?

Who can support us?

What are the by-products or spin-offs?

Whatever solution you're considering, you'll need to decide whether it's worth pursuing. Will it benefit you, your team, your community, your customers or your organisation? Is it operationally sound? Will it work? Will people like it? Will it be judged better than other solutions, or previous solutions?

You could start with a simple NAF test.

Judge your solution according to three simple criteria. Without thinking too hard, give your solution a simple score out of ten for each criterion.

Novelty

How new is this solution?

Is it radically new or only *newish*?

Has this been tried before?

Has anyone else put into practice a solution like this?

Attractiveness

Do you like this solution?

Is it likely to be attractive to your team, your manager, your organisation, your customers?

Will this solution solve problems the organisation thinks significant?

What are the specific benefits (costs, operations, markets, branding, image)?

How does this solution align with the organisation's strategy?

Feasibility

How workable is this solution?

What's the cost/benefit relationship?

Can you measure a return on investment?

Can you actually see it happening in your organisation?

The solution that scores highly on all three counts is rare. A very new idea may be extremely attractive but it may not look feasible. The feasible solutions tend not to be very novel.

Once you've given your solution a NAF score, take it to others, and ask them to score it. (You may need to design a powerful, convincing presentation to promote your solution.) You'll soon find out the chances of survival for your solution, and learn new ways of building feasibility.

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7.2 Creating a business case

The next step in preparing your solution for the real world is to build a business case.

The business case checklist will help you distinguish the really useful solutions from the ones that merely make you feel good.

Fill in the list below. Don't be tempted to miss a question. When you've completed this checklist, your solution will be more vivid and detailed in your mind.

The business case checklist

What need is your solution addressing?

What outcomes are you aiming for?

What are the expected benefits?

Who will this solution benefit?

What key actions will you take to implement this solution? (no more than six)

What is your deadline?

What resources do you need, that you don't have? (Include a budget.)

What support will you need? (And where will you find it?)

Who are your stakeholders?

What will be the impact if you do not take any action?

What internal/external barriers do you see that could stop you being successful?

What key behaviours and skills will need to be put into practice to achieve the desired result? (Include all the skills you might not currently have.)

What internal/external barriers do you see that could stop you being successful?

7.3 Challenging your own biases

You may be very attached to your solution. After all, you've done a lot of creative work developing it! Your love for your solution may be distorting your view of it. Scientists talk about *cognitive biases*: tendencies to misread reality. Because they're usually unconscious, we have to work hard to identify and overcome them.

The idea of cognitive bias was first developed by Daniel Kahnemann and Amos Tversky in the 1970s. Since then, psychologists have compiled an ever-growing list of biases (Wikipedia, at the time of writing, lists no fewer than 106).

Three cognitive biases are particularly important.

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Confirmation bias leads us to ignore evidence that contradicts our mental models. Having constructed our solution, we may look for the evidence that supports it and ignore the evidence that challenges it. As a result, we may begin to see our solution as the *only* solution for the situation.

A variation of confirmation bias is the **saliency effect**, in which we use vivid or striking information to support our case, rather than statistical evidence. Sometimes we can become hypnotised by information that dazzles us. Information that's sufficiently vivid or salient can blind us to other, relatively dull, information: results of controlled surveys, trend analysis and so on.

And **anchoring** is the bias by which we tend to value early information more than later information. We *anchor* our decision to the information we receive first. As you developed your solution, for example, your earlier ideas – of costs, or benefits, perhaps – may have anchored your assessment of other consequences or implications of implementation.

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Daniel Kahnemann is a behavioural economist who has studied cognitive biases closely. And he professes himself pessimistic. “Knowing you have biases,” he has written, “is not enough to help you overcome them. You may accept that you have biases, but you cannot eliminate them in yourself.” He does think, however, that we can help others correct their biases. “I am not very optimistic about people’s ability to change the way they think,” he says in one interview, “but I am fairly optimistic about their ability to detect the mistakes of others.”

The moral of the story? Ask others’ advice to help you validate your solution.

7.4 The Sceptic’s Checklist

Daniel Kahnemann suggests that all business decisions should be submitted to an external reviewer who systematically submits the idea to objective critique.

Here’s an adapted version of Kahnemann’s 12-point checklist: hand this to a colleague and invite them to assess your solution by asking you these questions.

The Sceptic’s Checklist

1. Where are you being driven by self-interest?
2. Have you fallen in love with your solution?
3. Has anyone criticised your solution yet?
4. Are you justifying your solution by comparing it to a notably successful past solution? If so, how do the two solutions differ?
5. Give me at least two credible alternatives to your solution.
6. If you had to make this decision again in a year’s time, what information would you want? Can you get more of that information now?
7. Where have the numbers come from?
8. Are you being hypnotised by vivid or spectacular information, or by a charismatic personality?
9. Are you relying too much on past decisions to structure this solution?
10. Are you being overly optimistic in your projections?
11. What’s the worst case scenario? Find a worse one.
12. Are you being overly cautious?

Once you have validated your solution, it’s time to implement it. Your creative journey is coming to its conclusion, and you need to return to the operational world.

Crossing back into the operational cycle is a moment of risk. We need to be ready to assess and manage that risk.

8 Managing risk: think dangerously, live safely

All new solutions involve risk. The solution you've chosen will inevitably have consequences. Some you can plan for; others will be unexpected. Once you're on the way back into the operational cycle, you will have to manage those risks.



It's all about probability. Some consequences we could mark as certain (100% probability), and others as completely unlikely (0% probability). Most consequences, however, will be harder to quantify.

We can calculate probability in two ways. We can look at:

- the probability of success; and
- the balance of risk and reward.

Estimating the probability of success itself means asking two questions:

- What could go wrong?
- How likely is it to happen?

8.1 Managing your stakeholders

Stakeholders are the people who have both an interest in your solution and the power to influence our problem-solving work.

You might not like the idea that others have a stake in your problem. But stakeholders are potentially your most important allies in implementing your solution. You can use their experience, expertise and resources. And involving them early will increase the chances of success.

So: first, identify and map your stakeholders. Who will be affected by your solution? Who has contributed to it? Who has the power to support or hinder implementation?

You might identify both organisations and individuals as stakeholders, but you can only deal with people. Within a stakeholder group or organisation, identify the appropriate individual stakeholders.

You could map stakeholders on a large piece of flipchart paper, with those most affected or involved near the centre and others at varying distances from the centre. You can also link stakeholders whose interests are related.



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Stakeholders: the nine 'C's

This checklist was originally drawn up by the National Health Service in the UK.

- **Commissioners:** those that pay you to do things
- **Customers:** those who buy your products or services
- **Collaborators:** the people you work with to develop and deliver your products or services
- **Contributors:** those who provide raw materials or knowledge
- **Channels:** the marketers and distributors with a route to your customers
- **Commentators:** whose opinions about you are heard or seen by customers and others
- **Consumers:** the people served by our customers
- **Champions:** those who can sponsor, promote and support your efforts
- **Competitors:** the people working in the same area who offer similar or alternative services

You can now categorise stakeholders in terms of their interest and power. Some will have power to help or hinder you. Some will have an interest in generating a solution; others will not. Your manager, for example, can probably influence what you do, and may be very interested in generating a solution. A customer may be extremely interested in generating a solution, but little immediate power in implementing it.

Map out your stakeholders on a power/interest grid, so that you can see how to involve them.

High power	Communicate These are the opinion formers. Tell them what you're doing; review your analysis of their position regularly.	Collaborate Key stakeholders who should be fully engaged as partners in the problem-solving process.
Low power	Consider Do little with these people but keep an eye on them. Their interest or power may rise if circumstances change.	Consult Increase their influence by asking them for their opinions: interviews, surveys, focus groups. They may become consultants in all but name.
	Low interest	High interest

Your working methods will differ with each of these four groups. With the collaborators, you are likely to set up problem-solving meetings; and you'll need to manage these well.

8.2 Solution effect analysis

Solution Effect Analysis tests a decision and identifies its effects. It will help you to:

- see whether your solution will actually do what you want it to do;
- identify the actions you need to take to implement your solution;
- compare the effects of different plans of action; and
- check that your solution doesn't create new problems.

Solution effect analysis (SEA)

1. Define the course of action you intend to take.
2. Identify the major categories within which you want to assess the effects of the action. Choose these categories carefully.
3. Explore the potential effects of the decision within each category. Work out the effects within each area. If one category becomes overloaded, the part of your plan of action relating to that area may need rethinking.
4. Analyse the effects. Highlight the effects that need immediate attention, and also any linkages between effects. Above all, don't ignore any adverse effects or new problems. You may need to balance the difficulties of implementing your solution against the benefits of seeing it through.

8.3 Engagement: limiting the risk

Implementing your solution will take courage. How can we become more courageous as we cross back into the operational cycle?

One way is to gain more control over the situation. Everything you've done to develop and validate your solution will help you.

Another way to become more courageous is to build *reversibility* into your plans. There will be a point of no return, beyond which the solution will have inevitable consequences. Sometimes, it's a good idea to delay that point of no return.

And we have, in fact, invented an excellent practice to do just that.

It's called 'getting engaged'.

When a couple decide to marry, they often announce their engagement. It's a useful institution: the couple can test their decision in public, and delay making the final commitment.

You could transfer that idea of marital engagement to your solution. A pilot scheme, a trial run or a survey, like an engagement, will allow you to test the solution before implementing it fully.

9 Afterword

We've reached the end of our creative journey. We've returned to the operational cycle.

What have we discovered?

First, we discovered that creativity is not some mysterious capacity that only some people possess. It's not the province of the unconventional, the artistic or the uninhibited. It's a body of skills, drawing on both the rational and the intuitive parts of our minds, as well as on our practical experience and imagination.

At its very heart are two sets of complementary skills. **Mental agility** delights in making new connections and sparking multitudes of new ideas; and **design thinking** seeks to resolve the chaos of novelty into elegant, workable solutions.

Surrounding those skills are another pair of complementary competences. **Goal orientation** – otherwise known as 'looking for opportunities' – is a form of restless curiosity, always looking for the main chance, and not very far removed from the unscrupulousness of the thrill-seeker (or even the criminal). And **objectivity** looks at creative solutions with a cool eye, judging them against the protocols, rules and procedures of operational work.



"I studied English for 16 years but...
...I finally learned to speak it in just six lessons"
Jane, Chinese architect

ENGLISH OUT THERE

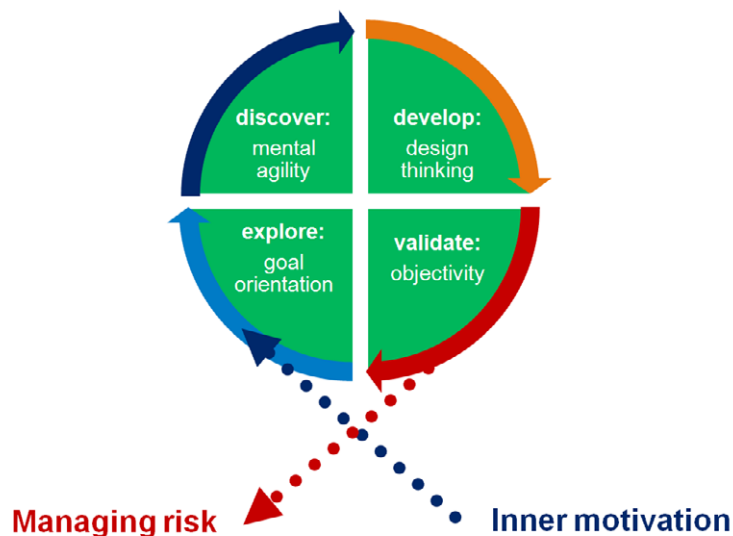
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And finally, another pair of aptitudes that complement each other.

Managing risk allows us to examine the problems of implementation so that we can make a creative solution succeed in the real world.

But the final aptitude is perhaps the most important of all. For without **inner motivation**, we would never embark on the creative journey in the first place. Without the compulsion of inner motivation, we would never set out to create anything new, or see it through to its triumphant conclusion.



We live and work at a moment of unprecedented change. Now, more than ever before, our enterprises need people who can think creatively, adapt to new situations and generate innovative solutions. Creativity is, more than ever before, a core competence, not just in the creative industries, but in science, technology, engineering, public health, government and every other sphere of human endeavour.

Creativity is no longer a luxury add-on at work. It's essential to our continued prosperity and well-being.

We all have different creative strengths. For some of us, those strengths lie in communication and design; for others, they lie in research. Some of us find our creative element in managing others, and some in caring for others. To quote Ken Robinson:

People are not creative in general but in doing something concrete.

And it's up to each of us to decide what that concrete something is.

What do *you* want to create?

10 Appendix: where to go from here

The number of books about creativity is vast. Here are some of the books and authors that have directly influenced this one. And yes, I did write the first one.

Barker, Alan	<i>How to Solve Almost Any Problem</i>	Pearson, 2012
De Bono, Edward	<i>Lateral Thinking in Management</i> <i>Teach Your Child to Think</i>	Penguin 1982 Penguin, 1993
Claxton, Guy, and Lucas, Bill	<i>Be Creative</i>	BBC Books, 2004
Fritz, Robert	<i>Creating</i>	Fawcett Columbine, 1991
Gawande, Atul	<i>The Checklist Manifesto</i>	Profile, 2011
Henry, Jane	<i>Creative Management and Development</i>	Open University, 2006
Koestler, Arthur	<i>The Act of Creation</i>	Picador, 1975
Milkako, Michael	<i>Thinkertoys</i>	Ten Speed Press, 2006
Perkins, David	<i>The Eureka Effect</i>	Norton, 2000
Pope, Rob	<i>Creativity: theory, history, practice</i>	Routledge, 2005
Rickards, Tudor	<i>Creativity and Problem Solving at Work</i>	Gower, 1990
Robinson, Ken	<i>Out of Our Minds: Learning to be Creative</i>	Capstone, 2001
Van Oech, Roger	<i>A Whack on the Side of the Head</i>	Warner Books, 1998

And as for websites, well – where to begin? Here are some ideas.

[Cre8ng](#)

(This site has the largest list I've yet found of links to other creativity sites.)

[Creativity for Life](#)

[The Creativity Post](#)

[99u](#)

[Creativity Games](#)

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