

HOW TO USE THIS BOOK

We start this book with a deep dive into the practices that design can bring. In Part 1 you will find a close description of design practices, from the inside, as it were. In Part 2 we step back and consider design in the world, to get an understanding of the context in which design practices have developed. Part 3 explains how design is now on the move, and how design practices are expanding beyond the confines of the traditional designing disciplines. The impressive breadth of these newfound applications is then taken as a starting point for drilling down to the core practices that design can bring, showing what other professional fields can learn from design.

The format of one-page essays makes all of this knowledge accessible in the most flexible way. This book is meant for grazing, in all directions. I would recommend reading a couple of pieces at a time, and then reflecting on how these observations link to your own experiences.

The main text is supported by references, marked with a * at the appropriate spot. These stars lead to the References section in the back of the book, which is organised by page number. I have tried to select books and papers that can also be accessed by readers that do not have access to a university library.

In talking about design, the book strives to embrace many issues and problems which are common to all creative disciplines. Inevitably, some of the examples used in the book are taken from my own original discipline of product design – simply because it is always better to write about the things you know. But this book is based on the practices of a very broad array of experienced designers from many fields. The author is just the messenger.

As you read this book, you will find thoughts that range from gentle musings on design to impassioned attacks on various misunderstandings surrounding creative practice. There is well-meant advice, and some warnings about what NOT to do. While these are all very serious, they should not detract from the pure pleasure of creative practice.

Enjoy!



**IN-
SIDE
DESIGN**

DESIGN AS LEARNING

Early hopes that by describing design as problem solving we had captured its essence were, in the end, not justified. The problem solving models of design are particularly helpful when you want to control a design process, or to make your design project run more efficiently. But the problem solving model is silent when we want to know more about design than just how to control and structure it.

This relative ‘distance’ from the way designers experience their work has long been a criticism by designers against the problem solving view of design. One of the early architectural design theorists, Christopher Alexander, is on record* as saying that: ‘... *<design theorists> have definitely lost the motivation for making better buildings... there is so little in what is called ‘design methods’ that has anything useful to say about how to design buildings...’* A damning remark, if there ever was one.

So it seems we need more models and metaphors to accurately capture design. A radically different view, which tries to arrive at a much closer description of design as it is experienced by designers, concentrates on the learning that takes place during design projects.

Design can indeed be seen as learning: as a designer, you gradually gather knowledge about the nature of the design problem and the best routes to take towards a design solution. You do this by trying out different ways of looking at the problem, and experimenting with various solution directions. You propose, experiment, and learn from the results, until you arrive at a satisfactory result. For instance, when you are designing, you sketch an idea and then look at it with a critical eye. This fresh look often immediately shows you what must be changed in order to improve the design. So you change it, and then you again look critically at your work, etc. Design can be described as a process of going through many of these ‘learning cycles’ (propose-experiment-learn, propose-experiment-learn, again and again) until you have created a solution to the design problem.

In this way, you learn your way towards a design solution.

DESIGN AS EVOLUTION

Creativity in the design process is often characterised by the sudden occurrence of a significant event – the so-called ‘creative leap’. Sometimes such an event occurs as a sudden insight, but often it is only in retrospect that a designer is able to identify at which point during the design process that key concept began to emerge. Such after-the-fact accounts may not be completely reliable. But we like to believe in this mythical creative leap, anyway.

When you observe designers at work you see a process that is much more gradual, like an evolution. The initial ideas can be seen as the first primitive objects, evolving and becoming more subtly tuned to the design problem over the generations. But design problems are also something like a moving target: they are usually very vague at the beginning of the design project. As the designer acquires more knowledge about the problem and about the possibilities for solving it, the design problem also evolves during the design project.

So creative design is not a matter of first fixing the problem and then performing a ‘creative leap’ to a solution. Creative design is more a matter of developing and evolving both the formulation of a problem and ideas for a solution, while constantly shuttling between them. The aim of the designer is to generate a matching problem-solution pair*.

Design thus involves a period of exploration in which problem and solution are evolving and are very unstable, until they are (temporarily) fixed by an emergent idea which identifies a problem-solution pairing. The creative event in design is not so much a ‘creative leap’ from problem to solution as the building of a ‘bridge’ between the problem and the solution by an idea. A creative event is the moment of insight at which a problem-solution pair comes together. This can be such a triumphant feeling that it overshadows all the slow and laborious evolution that went before it.

THE UNSURE

As a tutor, your task is to help all kinds of students become designers, which sometimes gives you vexing problems. For instance, what can you do about a student that is just very uncertain?

In tutoring an insecure student, you quickly get into all sorts of vicious circles. They tend to cling to the safety of their first idea. Criticising the student for being inflexible by not letting go of their initial idea, makes the student even more unsure, and more dependent on the tutor... If you go down that road, you end up with students who won't dare to go into the world after their study. And agoraphobia is not a good trait for a designer. Maybe it is better to be very diplomatic, and hum approvingly over the first idea. But then you create the impression that it's a good idea when it is not.

This calls for a solution at a different level. Confidence needs to be based on something, and that can be almost anything. Some students draw really well, others are good problem solvers, others are socially adept. Find a student's strong point, that can be used to stimulate a wider development, to build a basis for a broader confidence.

If that doesn't work or such a core competence is hard to find, as a tutor you can only wait for other things in the student's life which could create an opening. Just keep on tutoring, and keep

repeating that you are criticising the work, not the person. This process can take so long that students can be at the end of their studies before their confidence is really at a high enough level to start learning. You just have to hope that their level of confidence will support further development in practice.

However, these people are extremely vulnerable in their first job. If they are not handled with care, they might really get hurt.

UNREAL DESIGN

Design schools want to prepare their students well for design practice. That is why educators go to great effort to develop 'realistic' design projects. But this kind of realism is a bit of a joke – it does not go very far, really.

The main problem with this 'realistic' approach is at the very beginning of a design project, where students are given a 'design problem'. In the real world, there are no 'design problems'. Real-world design projects emerge from a subtle game of discussion and negotiation that is played after the initial client contact. It can take ages before the decision to start defining a design assignment is even taken. In this pre-project phase the designer and the client get to know each other, and they slowly and gradually build the trust that is necessary for a fruitful cooperation... What a difference from the educational setting!

Pure fear of ambiguity drives the tutors to begin a design project with a pre-defined brief on two A4's. In this way the student misses the all-important pre-design project phase.

And that has dire consequences: the complete inability to deal with the pre-design phase is the first thing that students will encounter when they enter design practice. They do not even know that this phase exists, let alone knowing what is expected of them in terms of

the game that needs to be played. This ignorance renders them completely powerless. In the worst case, the young designer will just ask the client for a well-defined design assignment, which rules out any chance of contributing to the all-important development of the design problem.

The creation of the design problem is a crucial design activity because it is in developing the design problem that you question the old assumptions a client might have, create the freedom you need as a designer, and establish your position as a trusted partner in the scary adventure of innovation. Failure to develop the design problem with the client precludes any possibility for real innovation.

EMPATHY

Empathy is the ability to project your personality into another person, to imagine 'standing in their shoes'. It is as close as we can get to really understanding someone else, and to appreciate what the other person is going through.

The ability to empathise is a real gift for a designer: it enables you to feel what future users of the design will experience. This feat of the imagination yields an incredible amount of information that can be taken into consideration before the design, or even a prototype, is made. It improves a design much more than any token 'usage scenario' or 'user research'.

And empathy can also be a great help in communicating with the stakeholders of the design project, such as the client and the production manager. If you are able to change standpoints, you can become aware of what drives them before a presentation meeting, and get an idea how they are going to react to the design. It might even help you to imagine how such a person sees you, as a designer presenting this design concept. This could help avoid or avert misunderstandings that often seem to accompany design projects. But of course, you should take care not to lose your own point of view in the process.

A third way in which I have seen empathy play a role in design, is that you can imagine that you are your design.

Normally it is considered a fallacy to ascribe feelings and emotions to objects, but in design it can be useful to do so. OK, imagine you are your design. Where are you? What do you see? What is around you? Do you feel warm or cold? This provides a lively picture of the situation in which your design will exist.

To develop this empathic ability, you have to be a very good observer of people, so that you will start imagining what it would be like to be them. Being an avid caricaturist also helps a lot. If there is one lost cause that I would like to champion, it would be teaching caricature drawing in every design school. Most design students are completely oblivious to their fellow human beings, and just design for themselves. They miss a lot.

'THE QUALITY WITHOUT A NAME'

It is surprisingly difficult to pinpoint what constitutes a 'good' design. It has something to do with the way the design enriches our experience, and how we can relate to it.

Creating this kind of value, this human quality, is much more subtle than just making an object that does not break right away. We all know what are considered good examples of design in our particular field, be it a fine building, an excellent machine, product or good graphics. But what makes them intrinsically 'good'? This is a question that brings us closer to the realm of art than we normally are, and maybe nearer than we want to be.

A designer can easily avoid these difficult issues by just making mundane stuff that functions and looks attractive. But we know that there are higher values to aim for, also in design. To make things that people will not only use, but like, and perhaps grow fond of. We know that some designs really affect people, and can be inspiring and moving at the same time.

To achieve this quality, we must aim higher than just functionality or blind self-expression, towards a deeper (more universal) human value*. This may sound vague and metaphysical. But I hope you recognise that there is

something like Quality with a capital Q. Some objects manage to be intelligently made, practical, and good to relate to. They combine head, heart and hand in a striking fashion.

EVERLASTING DEBATES AND THEIR RESOLUTION

Because of the way most design debates originate and perpetuate, you can be sure that people are never going to agree. Their fate can be summed up by Andy Warhol's black remark that *'you can never tell anybody anything anyway...'**

The reason design disputes are so tough is that, with design being such an open and underdetermined profession, there are many approaches one can take to understanding design, and many ways to describe what good design is. These differing viewpoints are rooted in the fundamentally different ways people look at the world. Rationalists against Intuition, Problem Solvers against Learners, Idealists against Pragmatists... But design is seldom discussed at that level, the debate usually centers on the application of these fundamental differences in design practice. Because they do not go back to the point where their differences originate, such arguments can never be resolved.

Maybe that should not even be the main goal of the debate, since it is a good way to concentrate thoughts and to clarify a subject. The philosopher Emmanuel Levinas has turned the whole debate within philosophy on its head by observing that all of philosophy is about being right, and convincing others that you are right. He claims that this is not

always the most interesting thing to do. He proposes a 'philosophy of the other', which focuses on finding ways to understand the other, instead of trying to overpower him with arguments. This could be an interesting approach for a new, more productive type of design discussion.

As it is, the fundamental differences at the root of design debates mean that they have no resolution. Old debates never really die, they just fade away into irrelevance.

DESIGN FOR DEBATE

The UK designers Anthony Dunne and Fiona Raby are convinced that design has a great and seldom used potential to appeal to people's imagination and to spark thoughtful discussion. They dislike the fact that most design is completely driven by commerce. They see a much deeper intellectual value in design's ability to trigger debate, discussion and arguments about our possible futures.

Traditionally the role of initiating debates that reflect on the human condition, our values and the meaning of life, has been assigned to the fine arts or other art forms like film. But Dunne and Raby argue that this doesn't work anymore – when you walk into a modern art museum or go to a movie, you enter with the anticipation of having an experience, maybe even being shocked. This makes you virtually impervious to that experience. You step into a world where your everyday life is put on hold and your sensitivity is blunted. You are not yourself anymore, you have become an observer.

But a design can catch you off guard: it is out there in the real world, and your initial reaction will come from your real self. So when you encounter a design that contains an unexpected layer of meaning, you are compelled to stop and think about this design's message to the

world. Anthony Dunne and Fiona Raby have built an extensive oeuvre by designing in this way: they call it 'design for debate'. For instance, they created a beautiful stuffed plaything for children in the shape of a mushroom cloud, so kids can get used to the reality of a nuclear explosion at a tender age... That HURTS!

To design for debate is an extremely subtle art: it is comparatively easy to make designs that shock, but this will only result in people rejecting your design outright without thinking about it. It is really hard to create a design that is intuitively attractive to people but that, on reflection, reveals hidden messages that will make people feel uneasy and cause them to think again. So the stuffed mushroom cloud is a well made toy, a very attractive object, really – when you look at it without thinking.

LITTLE WHITE LIES

Apart from the grand ethics of Golden Rules and utilitarian principles of human behaviour, there is also a hidden, everyday ethics. This is about those little irregularities that can occur during a design project. Most designers will recognise the situation: you are working on a design, and it turns out to be trickier than you thought. The deadline is approaching, so you either have to cancel the meeting or present a design that is not quite hammered out. Some nice drawings and your good presentation skills will probably get you through the meeting.

The problem is that if you go through with the meeting you might end up with decisions in your design that you are not quite sure about, and that might be wrong. Reversing those decisions later on in the project will lead to a loss of face, so you could be stuck with them. In a design agency, I once spent a couple of weeks changing the very working principle of a product in a way that the client wouldn't notice. The cost of all the extra design hours alone should have been enough reason to call the client and admit the earlier mistake. But the account manager said that this was the only way to save our 'credibility'.

This is very dangerous ground. The most infamous cases of failed designs are not the result of big mistakes, but of those little decisions that make a

project spin out of control. The story of the faulty design of the O-rings in the booster-rockets of the space shuttle Challenger does not contain any real villains – it doesn't even contain bad designers. The only thing that set them on the road to disaster was a supplier who preferred to say that a low temperature launch was no problem, although he didn't know for sure. He was hiding the uncertainty, trying to save face.

In the early phases of a design project many decisions are made on the basis of minimal information. You can only really understand their consequences much later in the project. If those choices are seen as decisions, instead of as proposals, they can easily lead to design disaster. Designers can't afford the luxury of having a face to save.

RISKS AND DISASTERS

Designers and engineers have been known to make some really spectacular mistakes. Products are unsafe, bridges collapse. Historians of technology have noticed that these mistakes tend to come in cycles. In an effort to make hanging bridges as lean as possible, people have overlooked particularly dangerous combinations of wind and rain. Every thirty or forty years, a bridge will be made too slim, and start dancing in the wind*.

These disasters are where the whole question of designer's responsibility takes on a grim face. Designing always involves a measure of uncertainty and estimation, there is no way to completely avoid risk.

In the famous case of the Citicorp building in New York, the owner of the design firm found out that the building, with its odd frame, had not been calculated correctly. That is, the shape of the frame did not comply with all the assumptions of the calculation methods that were used. It was an unsafe structure, despite having used the normal safety factors. A once-in-twenty-years storm coming from the wrong direction could blow it over. The structure of the building was adapted quickly to keep this from ever happening. The fact that the design firm had honestly owned up to making a mistake, and set about correcting it immediately, actually led to

the insurance company lowering their liability rates: the firm had demonstrated that they could act responsibly.

Different professional organisations have recognised these problems of moral responsibility and accountability, and have developed a 'professional code' for their members. These guidelines do give some basis for reflection on the moral dilemmas of everyday design practice, but they are rarely specific enough to be applied directly. They must be supplemented by a personal sense of responsibility.

HUMAN CENTRED?

One of the strengths of design that has helped spark the popularity of Design Thinking is its inherent commitment to create value for people. Organisations that are bureaucratic or technocratic often have lost touch with this core capacity, and they really profit from a good dose of ‘Human Centred Design’ (a bit of an odd term, as all design has to be human centred)*.

In the course of its history, human centred design has meant various things. In the 1950s, designers started measuring the human body and collating that data to make sure that products and environments would fit the people they were meant for. The knowledge gathered in this classic age of Ergonomics (‘Human Factors’ in the US) is of course still used today. However, people soon realised that static physical measurements were of limited value, and that these needed to be complemented by insight into the interaction of people with the products. This led to an acute interest in perception and cognition. Labs were set up in which use situations were mimicked and each participant’s every move closely studied after having been instructed to ‘act naturally’.

While this gave nice data on behaviour, the lab scenario obscured the ‘why’ of the actions observed, so the next generation human centred designers abandoned the lab to do ethnographic

studies of real people in their natural environments. This type of open-ended study tends to create an avalanche of very rich data, that needs to be collated in likely use scenarios. While these scenarios are useful, they are a bit dry as pure ethnographic observation fails to capture the experience of the user.

To fill this gap in data, designers invented ‘personas’, hypothetical (fake) individual users based on the aggregation of user data. While personas can help to integrate disjunct data and increase empathy, their use is still problematic. How do you relate to such a fake person? What conclusions can you validly draw from data that is collated in this way? Personas can’t answer back. The only way to bypass this dodgy interpretation step is to interact with the real people you are designing for, *while* designing – hence the rise of ‘Participatory Design’ (in which users are regularly consulted) and ‘Co-Design’ in which real, genuine human beings are invited into the design process.

These days, companies and public sector organisations alike are understanding the importance of making human-centredness central to whatever they do, and that the deeper needs, values and fears of people are vital input into the strategic decisions of the organisation. Human centred design is finally becoming strategic*.

Developments in Design

R&D TO D&R

Normally, big organisations have a Research & Development (R&D) department where knowledge is gathered and new technology is created that can then be turned into useful products, systems or services. These R&D departments are impressive, sophisticated organisations in their own right, populated by very clever creative practitioners. They are the intellectual treasure trove of a company, the place where the unique knowledge that gives competitive advantage is created. R&D Departments are jealously guarded against intruders: picture solid walls, access gates, security cameras, and a dragon behind the reception desk.

But at the same time, the research and development practices that go on behind these walls are curiously wasteful. Only a small percentage of all the brilliant hard work makes it to market; most of it ends up on the shelf. From a distance, it doesn’t seem to make sense to do so much research, hoarding knowledge that turns out not be useful at all, and spending millions on developing more clever technology than eventually ends up in marketable goods.

The only way to repair this wasteful process is by turning it around: first doing design (D), figuring out the value proposition, and then investing in gathering the knowledge (R) and developing the technological know-how to make the design a reality.

But this puts the onus on designers to build up the argumentation for spending substantial amounts of money on research and development. Design practices weren’t made for this. In its conventional role, design builds a case by finding sufficient evidence for the promise that the ‘product’ will do well in the ‘market’.

To climb into this new, leading D&R role, designers will have to show that all key assumptions in the proposed design have been tested and validated. Only then can designers justify the investment needed to start a fresh program in research and technology development.

Design will have to become more thorough, evidence-based, systematic and clearer in its argumentation.

FRAME CREATION PRINCIPLES

Frame Creation is a process of thinking around the problem rather than confronting it head-on. New solutions cannot be found by addressing the problem as given, but in the values and themes in the broad area surrounding the original context. To access these we need to bypass the assumptions that have led to the original problem formulation. And we need to embrace the complexity we find in this broader field, taking on the full complexity of the problem arena.

As we have seen in the last two pages the movement in the Frame Creation process is one of zooming out, expanding, and concentrating again as new frames come into view. It is the expansion of the problem space allows new patterns to emerge. The trickiest part in the process is in the transition between Field and Themes, but this is helped by purely concentrating on the values of the parties in the broader Field and forgetting about the original problem completely. This frees up the mind to look for the value that can be created in the broader problem arena. Then we need to deepen the Themes – the depth and richness of understanding of the Themes really determines the quality of the end result of the whole process – and make sure the Frames are strong enough to evoke a very clear picture in the mind of all the stakeholders.

The core of the Frame Creation process can be compressed in a workshop that itself normally lasts two to four hours. This is quite a magical session: at the end of the workshop your thinking has actually shifted, and moved away from old patterns.

But this sudden change can be a bit misleading: in a complex problem situation such a workshop takes months of preparation. And afterwards it takes months to rework the session more thoroughly, check assumptions that have entered the discussion, dig to achieve depth and thoughtfulness in the Themes, sharpen the Frames, make an exhaustive exploration of possible solutions and map these against the original problem, etc. After the adoption of one or more frames, the path to action can still be hard and long. New frames invariably disturb organisational cultures, processes, and structures that have been set up to support the conventional problem-solving in an organisation. Moreover, in a networked world, these frames invariably cut through organisational boundaries in unexpected ways. It is crucial to support the problem owner in the hard task of following through on the path to action toward real-world, on-the-ground results.

DIGGING DEEPLY

The depth and breadth of our understanding of the Themes is central to the quality of the Frame Creation process. Let's take as an example a deep human theme like 'identity', which comes up regularly in the Frame Creation projects done through the Designing Out Crime research centre page 186.

To understand the nature and the structure of a Theme, personal experience is key. Consult your own experience or interview people about theirs. *What are your own strong experiences with forming or changing your identity? What triggered these? How did it feel? What were you thinking? What did you do? Did other people play a role?* To enrich this picture we can then turn to the arts: music, visual art, novels, theatre and film are a great source of both deep understanding and practical knowledge. Good art can provide universal insight, expressed in a very concrete and personal way.

On a slightly more abstract level, one can consider the psychology and sociology of the theme – *how does identity relate to our deeply felt beliefs and values? What feelings are involved with identity? What mental models, knowledge, learning processes, thinking, etc. is an identity actually based on? What are the elements of a person's identity? What are the physical expressions of identity? What external factors can have a positive or negative effect on the personal experience of identity? How can relationships affect identity?*

The experience of a Theme like identity is also dynamic, it changes over time. *How is identity formed? Are there discontinuities in the development of identity or is the change smooth and gradual? When does the forming of identity go 'wrong'?*

Themes like identity are layered, and to attain a deep enough understanding they need to be researched thoroughly in various ways. Scientific literature can be too aloof and abstract, but it is very helpful for some themes. Philosophers literally devote most of their life to thinking about specific themes – for identity, the existentialists (e.g. Camus) and phenomenologists (e.g. van Manen) are great starting points*.

What generally works well is to start close by and focus on personal experiences. We all have deep knowledge of these universal human themes, they are inside all of us. It is just that we normally don't think or talk about them that much. They tend to come up only in the deepest conversations with our best friends, or at perhaps at funerals. I have been amazed at the deep and heartfelt eulogies that people are capable of putting together and delivering at such an existential moment. When this happens there is also a slight pang of pain and regret – couldn't we have said this to the person when he or she was still alive? Why don't we talk on this level more often?

OLD AND NEW

These Bachelor of Creative Intelligence and Innovation students become creative practitioners across many fields and disciplines. They develop the creative confidence to explore the space between the established disciplines, and take these practices back into their core disciplinary contexts.

We have found that within such a complex and possibly confusing transdisciplinary space, it is key that *you should always be within a practice*. You have to be deliberate about what you are trying to achieve, and how you are going to do that. I guess most of us will have experienced the perplexing dysfunctionality of a multidisciplinary team of very clever people who simply do not speak each other's language and cannot agree on a common way forward. Forced to fall back on everyday reasoning that is much less sophisticated than their professional practices, their collective intelligence is definitely less than the sum of their individual capabilities.

So how do you build a curriculum that is based on the exchange of practices?

For the first three years of this double degree, while the students are also studying their core degree, the Bachelor of Creative Intelligence and Innovation is taught in intense two-week summer schools and winter schools. The general flow of the curriculum is as follows: the first year starts with the development of

key skills on reframing problems and creativity in the subjects *Problems to Possibilities* and *Creative Practice and Methods*. In the second year innovation and complexity are tackled head-on in *Past, Present, Future of Innovation* and *Creativity and Complexity*. In the third year, the students investigate the practices of their own core degrees and learn about the implementation of innovations in practice in *Leading Innovation and Initiatives and Entrepreneurship*. The final year is different. The students, having now finished their core degrees, must strategically define their own position relative to (the future of) their professional field. They set out by studying creative practices in the wild, and finish off with capstone projects to integrate all of this learning.

This degree is now hailed as a radical re-imagining of university education. But perhaps it is truer to say that this degree has just gone back to the roots of how universities started: as gathering places of universal knowledge.

It is both very new and very old.



EPILOGUE

THE WALL

Imagine you are setting out into the world, with your backpack and sturdiest shoes, to explore the mountains you see in the distance. But then, you find a wall blocking your way.

What do you do?

You could try to climb the wall. Break through. You might look for tools to help you with either. Or you might start walking along the wall to see where it ends. Who knows, there might be a gap to squeeze through.

Or you can deny the fact that the wall is there.

This is the reaction of the protagonist in Dostoyevsky's rather grim short story *Notes from the Underground**. The man gets right up close to the wall and angrily refuses to accept its existence. Of course, this deadlock can only end in self-destruction. For Dostoyevsky, people are spiteful, weak, mean and full of self-hate.

In creative practice, there is a general assumption that people are good, or at least that they mean well (in their own way). Yet we know how hard it is to create the new, and that new things can be destroyed before they have even been made. The Dutch poet Lucebert captures this well when he writes that: 'All things of value are vulnerable'.

We all know these walls, the barriers to change, and have felt the weakness and brittleness of goodness, its vulnerability in face of the brute force of negativity.

How can we overcome this with our creative practices?

WE HAVE MET THE ENEMY AND HE IS US

One of the things that holds us back is habit. We get caught in patterns of thinking (old frames) and find it difficult to imagine alternatives – let alone conceive of new ones, and adopt them as our own.

The physicist and philosopher David Bohm proposes that we should develop a new sense, which he calls the 'proprioception of thought'. He observes that we make a grave mistake when we identify ourselves with our thoughts and feelings. In his view, thoughts and feelings happen more or less spontaneously, and we have a choice to accept them, by attaching significance to them – or to reject them.

This rather special level of reflection liberates us from the yoke of habit. For me personally, it helps me looking at the world with a freshness and wonder.

Within the patterns of habitual thinking and feeling, Buddhism singles out the emotions of Fear and Grasping as the very root of our troubles, holding us back from progressing in life. Fear and Grasping make us defensive, and less flexible than we should be. Unfortunately they are easy emotions to play on; they allow us to be manipulated. They can be overwhelmingly strong, and deep feelings of anxiety can have roots in childhood when the world was beyond our understanding.

Fear and Grasping are not pretty emotions but we must be aware that they exist, and can rule ours and other people's behaviours – especially when dealing with something as inherently uncertain as innovation. Understanding and respecting these feelings in others is the key.

Like they say in the instruction video the crew plays just before the aeroplane takes off: 'please put on your own oxygen mask first, before helping others'. We need to deal with Fear and Grasping in our own lives first, before expecting the same of others.