ALEXANDRE PACHULSKI

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EMBARKING ON A UNIQUE JOURNEY

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'Be yourself; everyone else is already taken', said Oscar Wilde, inviting us to remember that each of us is unique! He was right, but why is it so difficult? We spend our lives observing others, comparing ourselves to them and trying to conform to the rules, the norms, the social order, pursuing goals that are not our own. We're not encouraged, in today's society, to express our uniqueness, our difference, our talents or our dreams. We get no help in finding our own way in life, in aligning what we do with who we are. Yet we're looking not only for self-fulfilment but also to make a positive contribution to society.

Today, as the world is preparing to welcome robots equipped with artificial intelligence, we have the opportunity to reaffirm who we are, who we want to be and how we want to live and work together. This is our chance to define what we, as individuals, with our different aspirations and abilities, can bring to the world. It's the message that pop culture seems to be giving us in films like *Avengers* and *Justice League,* where we see superheroes joining forces. The tagline of the

film that unites Batman, Superman, Wonder Woman and others couldn't be clearer: 'You can't save the world alone'. That's good, because none of us feels up to the job. Yet, together, it may well be possible. But first, we need to know how we can contribute–what our 'superpower' is.

This journey of self-discovery should be central to our education systems, yet that's rarely the case. Schools continue to feed children information rather than teach them how to think. They encourage them to memorize other people's knowledge rather than develop their own understanding. They want them to learn facts, whereas education should be focusing primarily on helping them to know themselves and develop their unique talents. Why should we let a competitive spirit and the idea that everyone is the same dominate our education systems? Why not put social interaction, collaboration and mutual aid at the heart of learning?

And then, when we still haven't discovered who we truly are, we have to choose a job, because, obviously, we need to earn money to provide for our most basic needs: we need to have enough to eat, somewhere to live and clothes to wear–and, if possible, we would like to travel a bit, though not necessarily far. It's no longer about achieving a sense of fulfilment but simply a case of survival, of struggling to get by. Even if we're making a good living, many of us find ourselves, in our thirties or forties, reviewing our life and wondering why, given that we're unhappy, we don't change things. But is there any other way?

In any case, the companies we work for will be sure to tell us what we're allowed to do or not do, what we've the right to be or not be. This starts with the separation of our personal and our work life, with the result that we become increasingly anxious and agitated. Films like Charlie Chaplin's *Modern Times* and *Brazil* by Terry Gilliam illustrate well how we can sometimes feel like we're being crushed, if not annihilated, by the system.

Meanwhile, we're on the threshold of a future where artificial intelligence, robots, the Internet of Things and virtual reality will invade our lives, personal and professional, for better or for worse.

Judging by the number of TV series such as *Westworld*, *Black Mirror*, *Trepalium*, *Person of Interest* and *Altered Carbon,* it would seem that it's mostly for the worse.

This bleak future, however, is not yet upon us, and is, indeed, far from inevitable! In fact, this is the ideal time to ask ourselves some pertinent questions, and to try to answer them individually and collectively. We have the chance to change today's society and build the one we wish to live in tomorrow. And we don't need special superpowers to do this. On the contrary, making such changes is not only our responsibility, it also lies within our power–provided that each of us decides to take control of our own destiny.

We need to discover who we are, who we want to be, what we love and what we want, and explore every facet of our personality. This is the most exciting learning process we could ever hope to experience in life. Because learning shouldn't be restricted to our early years; it needs to become a way of life, providing us with the means to invent and reinvent ourselves–as John Keating invites his students to do in *Dead Poets Society.*

We then need to find our ideal work and the path that will take us there. Our ideal job is one that will allow us to align what we do with who we are, which is key to a sense of well-being. It's not about finding our dream job–dreams are imaginary–but rather one that best suits us among the range of possibilities. But it takes courage to explore these possibilities–and we may even need to invent them. We need to remember, too, that we're unlikely to find the perfect job the first time around, and that we'll need to keep on trying until we find the place where we can be ourselves and contribute to the common good.

Companies, which remain a dominant structure in the world of work, also need to evolve. What if the company were to become a welcoming structure that provides us with an environment where

we can pursue our career objectives? What if we could work alongside a community of contributors–co-workers, clients, service providers–sharing a common, or at least convergent, culture, values

and objectives? The key issue here is managing the subtle balance between individual and corporate objectives.

And all this would be supported by exponential technologies (artificial intelligence, robotics, Internet of Things, virtual reality) put at our disposal to help us realize our objectives. This, of course, requires us to agree on the sort of society we want to live in together in the future. Indeed, how can we hope to transform these technologies into tools useful to humanity if we, as human beings, haven't even defined the sort of world we want to live in?

It's this resolutely optimistic exploration of the future that this book offers, using illustrations from pop culture. As the French philosopher and futurist Bertrand de Jouvenel says, 'we can only influence the future. Let's do so together as we continue our journey!

Education

FROM STANDARDIZATION TO SINGULARITY

Knowing others is only science.
Knowing yourself is intelligence
Lao Tzu, ancient Chinese philosopher

When it comes to happiness, we're all self-taught! No one teaches us how to be happy. No one helps us discover what it is that gives us a sense of fulfilment. No one helps us chart our journey through life. No one helps us find our place in society. No one teaches us how to roll with the punches, manage the doubts and people's opinions of us, or analyse ourselves.

If life is a journey, we travel along the road without even knowing what vehicle we're driving, not even really knowing where we're headed. Of course, we continue to learn throughout life. As babies, we become aware of our body and our surroundings. We then learn to walk and talk. Next comes school, where we learn to write and count and are taught history, geography, science, and so on. Some of us then continue on to further education, exploring a particular field: economics, literature or whatever. Then comes the world of work, where we do what we can to develop skills that will enable us to hold down a job or two and earn a living.

Yet, all these skills, although very useful, don't equip us to face all aspects of life and to journey through it with confidence, because they're much too outward looking. So, why not focus on ourselves as a more important field of study? The Ancient Greeks certainly

tried to do so. On the Temple of Apollo at Delphi was inscribed *'Gnothi seauton'*, translated as the now-famous injunction 'Know thyself'. Socrates, by means of a dialectical method he called 'maieutics' (literally 'midwifery'), tried to bring to light his interlocutors' underlying beliefs to help further their self-knowledge. As the Greek philosopher allegedly said, 'Without this work on oneself, life is worthless'.

The problem we face is that while the so-called human sciences–philosophy, sociology, anthropology, psychology–attempt to study how we function, they have little practical impact on our day-to-day lives. Imagine quoting Levi-Strauss, Nietzsche or Freud to a friend who has just broken up with their partner and you'll understand what I mean! While these interesting disciplines can be very rewarding intellectually, they address humanity as a whole, but not us as individuals.

Despite the fact that bookshops are full of magazines on well-being, psychology and meditation, self-discovery still occupies a very small place in society. This pursuit is still largely absent from the education we receive, and particularly in school. The most highly valued knowledge and skills continue to be those that will help us earn money. Some of us may remember our parents' reaction when we told them we wanted to study art rather than enrol in business school, for example. We chase after money in the hope that we'll eventually earn enough to be able to afford the most valuable asset there is: time. Time that we've lost by spending too much of it chasing after money. As Boris Vian wrote: 'I don't want to earn a life, I already have one'. The education we receive should revolve around one thing only: helping us discover who we are so we can find our own way to self-fulfilment.

This is why we love books and films about characters who are on a journey of self-discovery. We're drawn to people who are ready to give up everything they have rather than remain imprisoned in a role they've not chosen. Films like *Into the Wild*, *Thelma and Louise*, *Eat Pray Love* and *Seven Years in Tibet*, or the cult novel *On the Road* by Jack Kerouac, tell our stories, in that we, too, long to renounce all

forms of normality to find out what makes us different! Or rather, they tell of the people we dream of being–people who would dare to defy the limitations imposed on them by society in search of their own truth. Some end well, others don't, but we dream of being like these heroes, who try even if they sometimes fail.

The Multiplicity school

**REDEFINING THE MEANING
OF HUMAN SINGULARITY**

*Wanting to be someone else
is a waste of who you are*
Kurt Cobain, musician

Before embarking on the ambitious project of discovering our own singularity, let's try to understand what it means. While 'singularity' may be central to our lives, the term rarely features in our everyday life. I won't pretend to give *the* definition of this essential notion; suffice it to say that our singularity is what makes each of us unique. This definition might seem almost disappointing in its simplicity. However, when we think about it, we'll realize that this apparent simplicity conceals a real complexity. Are we really aware of everything that makes us unique? Of what allows us to differentiate ourselves from others? Such essential things as:

–our thoughts, feelings and emotions
–our attributes and our flaws
–our ambitions, aspirations and desires
–our doubts, fears and apprehensions
–our likes and dislikes
–our way of seeing the world
–our way of acting and behaving

Have we ever really taken the time to discover what makes us unique? Has there been anyone in our life who's helped us in this endeavour? School? Our parents? Our friends? Our colleagues? Our psychoanalyst?

Multiplicity, the film by Harold Ramis released in 1996, sheds a particular light on singularity. It's the story of a man (Michael Keaton) who's so busy with his work and everything he needs to do that he neglects spending time with his wife (Andy MacDowell) and children.

In an attempt to solve the problem, he accepts a geneticist's offer and agrees to be cloned. But of course, a single clone is not enough, and he repeats the operation until he's surrounded by three clones.

The moment a clone opens its eyes, it could be considered as 'another him', with the same singularity. However, it soon becomes apparent in the film that the clones are evolving in their own way. We're left uncertain as to whether a clone is really him or not. The film, while perhaps not Harold Ramis' best work, nevertheless raises a lot of interesting questions:

–Is singularity something that's inherent in us at birth or is it developed?

–Is singularity one or multiple?

–Is singularity characterized by who we are or by who we want to become?

So, before we set out to discover what makes us unique, let's try to give some sort of answer to these different questions so that we can better understand what we're looking for.

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Is our singularity
a construct or a construction?

It matters not what someone is born,

but what they grow to be.

Albus Dumbledore in *Harry Potter and the Goblet of Fire* by J. K. Rowling

The different abilities and talents displayed by children around the world would lead us to believe that we're born with certain 'characteristics'. Often, it seems clear that these are inherited from our parents or grandparents: the children of engineers are good at maths, the children of musicians have a sense of rhythm, etc. Fortunately, this heredity doesn't follow an implacable logic! Otherwise, we'd have no free will and our life would be mapped out for us in advance. It's not uncommon to hear parents waxing lyrical about

abilities their children have that they themselves lack. For example, the son of some friends of mine has turned out to be an excellent musician, despite the fact that neither of his parents has ever touched an instrument nor are they great music lovers.

Are our talents innate, inherited from our family or from who-knows-where, a bit like winning the lottery? Or do these talents and abilities develop throughout life, like the clones in *Multiplicity* who develop their personality throughout the film? Where do our dreams, fears, aspirations and tastes, our way of working, learning, cooperating and moving–all those things that make us unique–come from?

As Dr Carol Dweck explains in her book *Mindset: Changing the Way You Think to Change Your Potential*, we need to move from a fixed mindset to a growth one. If we have a fixed mindset–if we believe that 'we are who we are' and that we can't do much about it–it's unlikely that we'll seize opportunities to change and grow. If we're convinced we need to make the most of the 'seed capital' we were born with, we'll find the slightest criticism unbearable because we'll perceive it as an obstacle to our success. We'll devote our energy to trying to avoid criticism rather than benefit from it. On the other hand, if we have a growth mindset, any criticism or feedback we receive and any failure we encounter will become an opportunity for us to progress and to grow this capital. We'll even welcome feedback, so that we can do better next time. Singularity, seen in this light, is like modelling clay that we can mould and make different things from throughout our lives.

If we follow Dweck's idea, singularity is clearly something we build and not something we're born with. In other words, it's something we can change throughout our life, not something assigned to us at birth. Therefore, it doesn't matter whether we succeed or fail: our results give only a snapshot of our abilities at a given moment. And a failure indicates only that we need to continue to develop these skills so that we'll succeed next time. Our self-image is thus totally de-correlated from the result of our actions. Understanding this will save us a lot of energy and will help us become who we want to be.

Life, then, can be seen like a road we're travelling on. When we're born, we find ourselves in a particular vehicle on a particular road–where we're born, our parents, our social class, our background, the era, etc. But through our experiences and our interactions, we gradually exercise our free will. We begin to 'customize' our vehicle, like in *Pimp my Ride*, MTV's cult TV series (broadcast from 2004 to 2007). In this show, people bring a broken-down car to a custom body shop, whose crazy team then transforms it into a kind of unidentified driving object. They might hang a Rococo chandelier on the ceiling, replace the dashboard with an aquarium or install a sound system worthy of a concert hall in the trunk. In another car, we can drive differently, experience something new, and maybe even dream about new destinations. But we need to look out for the intersections–all the opportunities to change direction that life presents us with. So, the question we need to be asking ourselves is this: is what makes us unique who we are or what we want to become?

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Is singularity who we are or what we want to become?

Act the way you'd like to be and soon you'll be the way you act.
Leonard Cohen, musician

Who we want to be is probably one of the most important issues we need to address in life. Yet, it's clear that our education systems are almost entirely focused on doing rather than being. We're encouraged to follow the best possible course of studies so that, later, we can land the best possible job. Who we want to be is a question that's rarely, if ever, asked. Likewise, in our daily lives, when we meet someone for the first time–whether on a flight, at a dinner or at the gym–the first question we usually ask is 'what do you do for a living?', as if we're defined by our job rather than anything else. Needless to say, when we sum people up by the job they do, it's easy to understand the distress of those who are out of work.

The question of singularity can be split into two: who are we today? And who do we wish to become in the future? Is our singularity determined solely by our way of thinking, acting and feeling? Or do our desires, aspirations, dreams, goals and hopes have an equal part to play in defining it–even if they're merely projections of a longed-for future that doesn't yet exist? How many times have you heard an engineer or sales rep explain that they chose their job only because they realized they were good at maths or had good people skills? But have they ever wondered about their singularity, about what makes them different from other people and what unique contribution they could make to society?

It's probably these people who made a hit of the song 'Le Blues du Businessman', taken from *Starmania*, the French musical by Michel Berger and Luc Plamondon.

This part of the song is particularly evocative:
But now the only question's how
Will I become what I'm about.
But what do you want, my friend?
In life we only do what we can
It's the name of the game.
I wish I could have been a star
I'm sure I would have made it far.
Flying all over to my show
In Rotterdam or in Rio
I wish I could have been a singer
To finally reveal the real me
I wish I could have been a writer
To create my own history
To create my own history ...[1]

Reading these words, we understand that the businessman's dreams, or rather regrets, are an integral part of his singularity. They

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1. Adaption of original French lyrics by Céline Choquette, cover by Joffrey Pinel.

define his personality, who he is and, of course, what it is that differentiates him from other businessmen.

If we realize that who we want to become is a far cry from who we are today, we can, starting with our 'seed capital', get to work on developing our skills and fulfilling our dreams. It's up to each of us to ask ourselves who we are and who we want to become. What makes us unique is a perfect blend of the two.

Or perhaps our singularity is more than a mixture of these two components. Perhaps, not content with a single way of being unique, we're actually multi-faceted.

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Is singularity one or multiple?

> *The more standardized the world becomes,*
> *the more interested I am in singularity.*
> Claude Sautet, film director

Imagine a normal weekday. In the morning, we may have breakfast with our family. We then leave for work and meet our neighbour on the street. We enter our company offices and run into a client, then we sit down at our desk after greeting our colleagues. At lunchtime, we grab something to eat from our local sandwich shop. The work day ends and we leave to meet up with three friends at the cinema. Question: how many different 'me's have we been throughout the day? To be more specific, how many times have we felt like 'someone else'?

Some might answer that they're the same person all the time, wherever they are, whoever they're with. The more astute–or honest–among us will recognize that, in fact, there have been many different 'me's over the course of the day. In reality, there's nothing particularly shocking about this. It's normal to adapt our behaviour at different times of the day depending on the people we meet and the situations we find ourselves in. When we run into a client on arriving at the office, it would be very unnatural for us to kiss them

on the forehead, tenderly asking: 'How are you, my darling?' That would be a much more natural way to greet our five-year-old child who's just arrived for his breakfast in his pyjamas.

It's also amusing to notice how we change our voice or intonation according to whom we're speaking. Depending on whether it's our mother, partner or a service provider who's calling us, we can display a fine range of voices that a professional impersonator would be proud of! But does that really mean that we're different people in these different situations? Our behaviour varies, certainly, but deep down, we remain the same person. It's as though we're the proud owners of a puppet theatre–like in the botanical gardens I loved to visit as a child with my mother and my best friend–and we take out these puppets at the right moment to match the story we're telling. Our singularity is, in a way, the sum of all these puppets, each representing a facet of us, forming what the sociologist François de Singly calls our statutory identities: parent, baker, sportsman, etc. These identities make up our personal identity, which aligns with our deeper inner self.

In fact, singularity could be defined as the lowest common denominator of all our behaviours, the core that supports all our interactions and makes us recognizable in a crowd of others. Some call it our personality. Regardless of the terminology used, we know that we're uniquely ourselves when we feel good about and in tune with ourselves, whatever the circumstances. This doesn't prevent us from adapting to different situations. Let's continue to get all dressed up for a wedding, but let's make sure that we're dressing up as ourselves and not as somebody else!

And this is the difficulty we face all our lives: how can we adapt our behaviour in different situations without losing ourselves in the process? Work is often perceived as a constraint precisely because it sometimes–often–forces us to adopt behaviours, ways and customs that are not our own and to submit our singularities to the 'norm'.

This makes us think of George McFly, the father of Marty (Michael J. Fox) in the *Back to the Future* trilogy, who behaves like a real wimp when confronted by the bully Biff Tannen, whether in high school (*Back to the Future*) or at work (*Back to the Future*

Part II).[2] In a recurring sequence, Bill raps his knuckles on George's head while calling him 'McFlyyyyyyyy', much to the despair of his son, who really wishes his father had the courage to stand up for himself (he eventually does). We sense that McFly isn't himself when he's being bullied. This can't be said to be his singularity, but rather a character trait–one he'd like to get rid of–that prevents him from asserting himself as he'd like to. It's vitally important that we take a good look at ourselves so we can truly be who we are. But how do we discover what makes us unique?

The Billy Elliot school

DISCOVERING YOUR SINGULARITY

The cycle of life always hangs in a delicate balance.
Who are we, and who do we want to be?
Atari Kobayashi, Mayor Kobayashi's pupil, in *Isle of Dogs* by Wes Anderson

Eat Pray Love, the book by Elizabeth Gilbert that gave rise to a film adaptation (with Julia Roberts in the leading role), tells the story of a woman who takes a journey of self-discovery on a trip to Italy, India and Indonesia. While she seemingly has everything one could wish for–husband, home, career, etc.–she's plagued by doubts. When the beautiful structure of her life crumbles, she decides to leave everything behind. Clearly, we can derive real satisfaction from the things we have. But if we haven't found our singularity–our place in the world, if you like–what we have is a mere house of cards that threatens to collapse at any moment, with the slightest gust of wind.

In his book *The Element: How Finding Your Passion Changes Everything*, Ken Robinson develops an essential idea in order to discover his

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2. Legend has it that this character was inspired by Donald Trump.

singularity. According to this internationally recognized advisor on education, the key to happiness is simple: we all need to find our 'element', the point of convergence between our passions and our natural talents.

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Discovering how it works

There is only one success–to be able
to spend your life in your own way.
Christopher Morley, novelist

We learn a thousand things in our youth, but we learn very little about the way we function. Yet it's this way of functioning that will determine our whole life. The better we know ourselves, the better chance we have of being happy. What are our tastes? Do we prefer sweet or salty? Mountains or the countryside? A house or an apartment? Men or women? Are we better at initiating projects or seeing them through? Music or sports?

Knowing ourselves is about understanding how we think, act, react and make decisions. Often, our feelings of inferiority or superiority, our complexes or our sense of pride come from what society values at a given time. In the 1980s, engineering students were highly esteemed by society. In the 2010s, those who show creativity and start businesses are the most likely to be highly prized. In 30 years' time, it will be something else. When all's said and done, all that is of little importance; what really matters is that we're true to ourselves, and thus able to identify and accept how we operate.

Howard Gardner, an American psychologist, has developed the theory of multiple intelligences, which enables people to better understand themselves and find their place, without any value judgement. He has distinguished eight types of intelligence:

 –linguistic-verbal intelligence enables us to understand words and nuances of meaning and to express what we think;

–logical-mathematical intelligence enables us to solve abstract problems of a logical or mathematical nature;

–visual-spatial intelligence enables us to establish spatial relationships between objects and, in particular, to find our way in a given environment;

–intrapersonal intelligence enables us to have a fairly accurate view of ourselves and to draw on this wisely in life;

–interpersonal intelligence enables us to understand others, to communicate and to anticipate some of their ways of behaving;

–bodily-kinesthetic intelligence enables us to take control of our body movements;

–musical intelligence enables us to perceive and create rhythms and melodies and to understand what the word harmony means;

–naturalistic intelligence (the last one Gardner described) enables us to sort objects and to categorize them.

This relatively recent theory (dating from the 1980s) is quite controversial because it's never been validated scientifically. Nevertheless, it makes it possible to escape the absolutism of classic intelligence-quotient (IQ) tests and value the uniqueness of each individual. There's no better or worse, just different ways of functioning. It's not surprising that our education systems tend to set some people up for academic failure, because they generally present everyone with the same teaching methods, when in fact each of us has certain types of intelligence that are more highly developed than others.

Personally, I'm incapable of remembering what I'm told orally. On the other hand, I have a good memory for situations. For example, I could tell you at what cinema and with whom I saw *Die Hard* one fine Tuesday in 1988, but I'm unable to remember what the waitress has just told me about the restaurant's specials of the day. I display what French educator Antoine de La Garanderie called kinesthetic memory. For those of us with this memory capacity, location has an important effect on what we remember: we learn things by associating them with a memory, a sensation, an emotion or an atmosphere. Visual memory makes it easier to memorize images, photos and diagrams.

People with this memory capacity will learn best by writing, drawing or doing something else that relies on sight. Those with auditory memory (which I lack), find it easier to absorb information when they hear rather than read it. Repeating out loud what they want to learn will be the most effective way to remember things.

At school, I also suffered a lot with shyness and from being an introvert: the popular kids in class were mostly loud-mouths. If I had had in my hands Susan Cain's book *Quiet: The Power of Introverts in a World That Can't Stop Talking*, I would've understood that shyness isn't a defect but simply a way of functioning that was under-valued by society at that time. Susan Cain highlights many people who've been very successful in life despite their introversion, which is reassuring for readers who are introverts, and bolsters our belief that it's possible for us to find our place in society. In particular, she cites Steve Wozniak (co-pioneer with Steve Jobs, who could never have created Apple without him): 'Work alone. You're going to be best able to design revolutionary products and features if you're working on your own. Not on a committee. Not on a team.'[3] This thinking is undoubtedly that of an introvert.

Clearly, at the risk of putting psychotherapists out of business, we should be helping children understand how they function from an early age. This is without doubt one of the most important things we can learn in life, yet it's rarely mentioned in mainstream schools. *Une idée folle* (a crazy idea), a film directed by Judith Grumbach, sheds some interesting light on the subject. It follows the experiences of several children in various alternative schools in France, including those of a little boy who provides a remarkable lesson on the importance of taking a broader view in certain situations. The boy explains that his ego is like a crocodile asleep inside him. When a situation gets him worked up or he comes into conflict with another child, he gets angry and frustrated and may feel like doing something bad (such as hitting the other child, for example). When he feels like this, he 'understands'

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3. Susan Cain, *Quiet: The Power of Introverts in a World That Can't Stop Talking*. New York: Crown Publishers, 2016.

that it's his crocodile that's pushing him to react, so he tries to calm the creature by talking to it and reasoning with it, and this helps him take a step back from the situation. Little by little, he feels his anger subside and, eventually, he's able to return to play normally with the others. The crocodile has gone quietly back to sleep.

This image of the crocodile may be infantile, but any method that involves taking a step back from our emotions and the reactions they provoke is very powerful. Learning over time to identify what makes us fly off the handle, and becoming aware of the ways in which we tend to react, which are not always appropriate, is the best way for us to gain more freedom–as well as, no doubt, avoid a lot of trouble!

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Discovering your dreams

Here is my secret. It is very simple: It is only with the heart that one can see rightly; what is essential is invisible to the eye.
The fox, *The Little Prince,* Antoine de Saint-Exupéry

When I think of someone unexpectedly stumbling upon their dreams, without having specifically sought to discover them, I think of *Billy Elliot*. Released in 1999, this film tells the story of an 11-year-old boy in a small mining village in North East England. Billy, whose father gives him money for boxing lessons, discovers a fascination for ballet one day. He's so enchanted by the magic he witnesses in the ballet class taking place in the room next door to his boxing class that he decides to use the money to take ballet lessons instead. The teacher, Mrs Wilkinson, discovers that Billy has real talent, which marks the beginning of the boy's adventures in search of excellence and of himself–against the wishes of his father and brother, both miners.

It is, of course, very difficult for Billy to accept his love of ballet, which is seen by those around him as an activity for girls, because it immediately marginalizes him in his community. He becomes different the moment he chooses this discipline. Discovering what

makes us unique is not only about recognizing that we have an ability or a way of functioning that differentiates us from others. It's primarily about asserting our tastes, desires and aspirations, which may not be those of the people around us or those valued by society. If Billy Elliot had been raised in a family of artists, his liking for ballet would probably not have been seen as anything unusual. He would've been more likely to stand out if he'd wanted to sign up for boxing classes.

Our aspirations, even though they may vary over time, often emerge when we're very young. In his autobiography, *Homo Delphinus: The Dolphin Within Man*, Jacques Mayol writes (two years before Luc Besson's film *The Big Blue* made him a star): 'I do not see the sea as a border to be conquered, a new territory to be exploited. I see it as the first element. I am the sea.' The singularity of this ordinary man with extraordinary breathing capacities was that from a young age, he imagined himself as a dolphin, living peacefully in the ocean among the creatures that live there. He was literally 'drawn in' by the sea, and it was that, above all, that made him so unique.

Those not lucky enough to be born with a passion or a vocation will often need to try out as many different activities as possible in order to discover what they enjoy and to spark their dreams. One of the strengths of the American school system is that students are encouraged to take part in various activities from an early age: drama, music, sports, science, drawing, etc. Indeed, how can we be inspired to dream and know what we want to do later in life without having access to a wide range of options?

One of the problems we face as adults is that we no longer allow ourselves to dream–or if we do, we dream only of things we think are achievable. This completely stifles our aspirations and what makes us unique. Imagine you're being asked this question: 'If you were to be told that everything you dream of is possible, what would you like to do with your life?' If you choose to answer honestly, you may discover things you don't dare–or no longer dare–verbalize, or even imagine. Yet, as the French author Madeleine Chapsal says: 'We have to dream, because, for things to become possible, we first need to dream them'.

The teaching methods of Rudolf Steiner are based on this idea. This Austrian philosopher and founder of anthroposophy

emphasized the world of the imagination, which, in his view, works like a flashlight, shedding light on facets of our nature that the physical world doesn't allow us to explore. The science of dreams can also enable those who are interested to decode the language of the unconscious and discover aspects of themselves, particularly their aspirations, that remain totally hidden in their conscious life.

To aspire to something is one thing; to be able to achieve it is quite another. To realize our dreams, we need the necessary talents. But do we even know where our talents lie? And could it be that we're talented in areas that we're not particularly passionate about?

<p style="text-align:center">*</p>

Discovering your talents

I have no special talent. I am only passionately curious
Albert Einstein, physicist

Talent is often defined as the ability to make a difference in a given field. In other words, it's an essential element of what makes us unique. When we talk about talent, we think of our various aptitudes, abilities and skills–in short, everything that enables us to carry out activities successfully.

The genius inventor Thomas Edison liked to say that talent is 10 per cent inspiration and 90 per cent perspiration, meaning that the idea of an 'innate gift' is a fantasy and that great things can be achieved only through hard work. It would seem that some children have natural, not to say remarkable, gifts from a very young age in certain areas. Take the following examples:

–Harmony Zhu, a young virtuoso pianist and composer who was winning national awards at six years old[4]

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4. To learn more: https://www.youtube.com/results?search_query=harmony+zhu (accessed April 2019)

–Aelita Andre, who, at the age of four, had her abstract paintings exhibited in New York, where some sold for several thousand dollars[5]

–Raffi Arto, who, after astonishing viewers on *La France a un incroyable talent* at the age of ten, performing (singing and playing piano) a song by Elvis Presley, made the final of the seventh season of *The Voice*.[6]

One of the keys to discovering our singularity is being able to identify these abilities as they come to light. Talent is like a mystery we can solve using the multitude of clues that life gives us. If, at school, we can write an essay in half the time it takes our classmates, and get a much higher mark for it, we clearly possess some literary talent. The ease with which we do something, and the time it takes us, are, indeed, two interesting clues. Enthusiasm for a particular subject is another.

From a very young age, the son of some friends of mine used to bombard me with computer-related questions, knowing I was working in that field. He seemed to understand the answers I gave him, which often amazed me, given how young he was. So, it was no great surprise when his parents told me he was going to study computer science. At the age of 23, he was hired by a major company, who were clearly delighted with him.

The difficulty with discovering our talents is that they can emerge only in favourable conditions! I've witnessed lots of people succeed spectacularly in one company and fail just as dramatically in another, simply because all the conditions (culture, organization, people, projects, etc.) were right for them to express their talents in the first place but not in the second. Great champions like Roger Federer and Andre Agassi have found it an uphill struggle to win the French Open. They're undeniably gifted tennis players, but because the clay

5. To learn more: https://www.youtube.com/watch?v=3C108WlIg-E (accessed April 2019)
6. To learn more: https://www.youtube.com/watch?v=g3SKOqGvgfE (accessed April 2019).

courts of the Stade Rolland-Garros are less suited to their game, they struggled to beat opponents who were more comfortable playing on this surface. We can observe this almost daily in our own lives. We might sing magnificently in the shower, but there's no guarantee we could perform on the stage of a major arena. We may have an extraordinary ability to relay our ideas to a small group, and yet completely lose it when the audience is too big.

So, the problem is this: how can we be sure that the place we're in isn't completely stifling a talent we naturally possess but that hasn't yet had a chance to express itself? That's why discovering our talents is about not only following clues that seem to indicate that we have skills in a particular area but also trying out different activities, in different contexts, with different people, so as to give ourselves the chance to see a hidden talent emerge.

It's clear that we're more likely to discover a talent in an area that we're passionate about. But while we might think it impossible to be talented without this passion, the case of Serge Gainsbourg provides us with a real counterexample.

Dozens of artists claim to be artistic geniuses, but many people would consider that Gainsbourg truly was one. He worked in many different musical styles (rock, reggae, jazz, funk), composed some of the most beautiful songs in the French repertoire and revealed the singing talents of many women (including Catherine Deneuve, Brigitte Bardot and Jane Birkin). In short, he was an extraordinary artist. Yet he despised music, considering it a lesser art. What he was passionate about was painting, an art form he positively venerated. Lucien Ginsburg (Gainsbourg's real name) would regret all his life that his paintings didn't achieve the success he hoped for and that would've allowed him to devote his life to what he considered a major art form. While he quite obviously expressed his talent, he clearly didn't realize his dreams, which goes to show that the two are not necessarily linked.

Our singularity is also our unique way of seeing the world.

Discovering your personal prism

Every child is an artist.
The problem is how to remain an artist once he grows up.
Pablo Picasso, painter

Luc Besson liked to say, in the 1990s, that framing was what mattered most to him, because it constitutes a way of looking at the world. For him, he said, that's what makes a photographer interesting (he was talking about Thierry Arbogast, the cinematographer on most of his films).

Our personal prism is an affirmation of our singularity. It's our unique way of seeing the world: we may be observing the same thing as everyone else, but we'll see it from a different angle–our very own. It often allows us to see something that others haven't seen, to shed new light on a situation. It lies behind many innovations and many achievements.

Jerry Seinfeld, one of the greatest stand-up comedians in the Los Angeles scene of the late 1980s, decided one day to propose a sitcom (named after him) to TV stations. The idea behind his show was original simply because it was 'a show about nothing'![7] Whereas other sitcoms of the time were convoluted love stories with a baffling array of characters, he didn't want to tell a story. Or rather, he wanted to give the impression that he wasn't telling us anything. Ostensibly, he was simply presenting the mundane life of four New York thirty-somethings: a woman and three men. Giving the impression that there's no particular plot is actually much more complex than it seems: whereas most sitcom scripts averaged 25 pages per episode, the script for each episode of *Seinfeld* was around 70 pages long.

In the 1990s, *Seinfeld* became the sitcom with the highest viewing figures, and the four actors received record-breaking fees. Nine seasons

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7. To watch the cult *Nothing Pitch*: https://www.youtube.com/watch?v=EQnaRtNMGMI (accessed April 2019).

later, the series has become a TV legend. You can't spend an evening watching TV in America without coming across the rerun of an episode. The sitcom also inspired *Friends* and *How I Met Your Mother*.

Jerry Seinfeld's take on the world is totally unique. He depicted the lives of Americans for almost a decade, talking about flirting, masturbation, unemployment, work, etc. Shedding a different–offbeat and ironic–light on the sort of situations we experience every day is clearly a recipe for success. This is something that Gad Elmaleh, who's a big fan of *Seinfeld*, has also understood, making us laugh by highlighting seemingly insignificant aspects of our lives (depicting us in swimsuits, skiing or in the subway). More recently, Aziz Ansari, in his series *Master of None*, released for streaming in 2015 on Netflix, continues this long tradition of actors who observe, in their own way, the things that go unnoticed by the rest of us.

These actors have made their personal prism their stock-in-trade instead of trying to conform to how others see things. In any case, this is sometimes impossible, as is the case with Grandin Temple.

After raising much concern with her parents, Grandin Temple was diagnosed with autism around the age of three.[8] Nobody understood her way of thinking and behaving. She would eat cards rather than play with them and would scream when anyone tried to pick her up, but she liked to snuggle between the sofa cushions. Her mother refused to put her in a psychiatric facility as her father wished, so Temple ended up going to school, although her life quickly became a living hell because she couldn't bear wearing clothes, the surrounding noise, the smells, the bell ringing, and so on. Eventually, it became clear that the little girl's problems were not linked to her intelligence, but were due to the fact, quite simply, that her mind worked in a different way. She showed exceptional visual intelligence, which meant she was able to classify images in her brain in the same way a computer would, but unfortunately, emotions don't lend themselves to this kind of classification.

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8. The following description comes from Pénélope Bagieu, *Brazen: Rebel Ladies Who Rocked the World*, London: Ebury Press / New York: First Second Books, 2018.

A few years later, her mother decided to send her to stay with her aunt on a ranch in Arizona. It was here that a discovery was made: Grandin showed extraordinary empathy with the animals, perceiving, through her personal prism, things about them that no one else could. While she struggled to relate to people, she felt close to the animals and began to grow obsessed with their welfare as well as finding ways to relieve their suffering. Everything began to fall into place: she would pursue a career in animal science research! She now uses her 'animal sixth sense' to put herself in the place of animals, imagining what might improve their condition. She has succeeded in imposing criteria for monitoring animal welfare and in setting a standard that most fast-food operations and chains are currently obligated to follow in the United States.

Her personal prism has not only improved animal welfare but has also changed the way we look at autism. She has given TED lectures, written books and managed to overcome her speech problems, simply by embracing the unique take she has on the world.

Our personal prism–like our way of functioning, our aspirations and our talents–is part of what makes us unique. And it's because we're all unique that education systems need to adapt to us rather than the other way around. We need to develop our own way of learning, one that works for us: in other words, we must learn how to learn.

The Yoda school

LEARNING HOW TO LEARN

You give a poor man a fish and you feed him for a day.
You teach him to fish
and you give him an occupation that will feed him for a lifetime.
Confucius, philosopher

Learning is one of the most important activities in life. It's what enables us to make our own way in life, to engage in all kinds of

activities, to learn from our mistakes and to help others. Learning is both the pathway and the destination, the ignition key and the fuel in our vehicle, the passport that allows us to cross borders. In a word, it's the alpha and the omega of our journey! The famous boxer Mohamed Ali summed this up well: 'The man who views the world at 50 the same as he did at 20 has wasted 30 years of his life.'

The first thing we need to learn is who we are! This is far from easy because, as seen earlier, our singularity evolves throughout our lives. Therefore, there's no end to our journey of self-discovery. Beyond this fundamental element, what else do we need to learn? The answer obviously depends on what we want to do with our life. But when and how do we get the answer to this tricky question? When we meet a child, the first question we often ask them is, 'What do you want to be when you grow up?' This question is actually quite cruel, given that most of the time, let's face it, we don't even know what *we* want to be (as witnessed by the spectacular career changes that many of us make in our mid-thirties or forties).

To know what to do with our life, we need to learn to know ourselves. But in order to know ourselves, we need to start living! Which brings us back to this tricky question: where should our learning begin? There's only one skill that can get us out of this vicious cycle: learning how to learn! This skill is the passport to our freedom, because it allows us, at any stage of life, to make choices that suit us without reciting the terrible mantra: 'Yes, but I don't know anything about that.' When we're still not sure about anything–least of all what will fulfil us–it frees us from the anxiety of having to make what feels like an irreversible decision about the career path we're going to take.

To align what we do with who we are–which is one of the keys to our happiness–we need to be sufficiently independent and confident in our skills to be able to embark on any occupation at any time. Because it's what we want, because we believe it will make us happy, and because, ultimately, only this empirical method can help us know ourselves and what we really want to do with our lives.

While our education systems generally persist in dispensing the same teaching methods to everyone (options are often available only much later on and are, on the whole, fairly limited), new approaches to learning are emerging. This is notably the case in so-called alternative schools with their various teaching methods–Montessori, Steiner, Freinet, Decroly. It's also true of computer-science schools, which revolve around a world where knowledge is often obsolete even before students have finished acquiring it due to the pace of technological change.

Created by Xavier Niel (the founder of Free and Station F), 42 is one such new type of school that's shaking up the traditions of the French national education system. It simply provides students with the appropriate environment to learn on their own and undertake projects, often in groups. There are no teachers. Students are allowed to ask a member of the organizing team a question, provided they've already tried to find the answer by themselves, on Google, or by interviewing other students. In other words, the organizers are not often disturbed. The idea is that students become autonomous in their learning and in solving problems, which equips them with the skills to adapt to the changes they'll be facing throughout their lives.

Episode 5 of *Star Wars*, *The Empire Strikes Back*, provides a good illustration of learning how to learn. We witness Yoda teaching Luke Skywalker (he continues his education in the following episode, *The Return of the Jedi*), but at no time do we see him pass on any skills or knowledge to him. What Luke needs to learn, he must discover for himself. Yoda does only one thing: he predisposes him to learn. More precisely, he shows him the path he'll need to travel to become a Jedi Knight, making it clear that it's up to him (as it is for every individual) to decide whether or not he wants to take it. No one else can do this for him.

In legendary scenes and memorable lines, we see Yoda lay the foundations on which Luke can build his own knowledge. At one point, as Luke prepares to enter a mysterious forest as part of a new exercise proposed by Yoda, he turns around and asks him: 'What's in there?' Yoda replies: 'Only what you take with you'. It's a good

metaphor for the approach we need to take. And strangely, one of the first things we need to do in learning how to learn is to learn how to unlearn.

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Learning to unlearn

It is what we think we know already
that often prevents us from learning.
Claude Bernard, physiologist

One of the biggest challenges we face may not be learning but managing to unlearn! The famous economist John Maynard Keynes used to say that 'the difficulty lies not in the new ideas, but in escaping the old ones'. Throughout our life, we act according to our beliefs, our convictions, our understanding and our 'truths'–what we consider to be true or false. We should be regularly asking ourselves this fundamental question: am I quite sure of that?

By 'that', I mean not so much in relation to the understanding we've developed about the world, but what we've come to believe about ourselves. Knowing ourselves is also about being able to distinguish between what's true and what's false. Many people claim they can't sing, convinced that they sing out of tune. Others, from an early age, convince themselves that maths is just not their thing. Others think they're unlucky at games, no good at languages or that they're simply unlikeable, or that it's too late to learn to play a musical instrument or change career. We're steeped in convictions that, throughout our life, we rarely call into question.

Fortunately, artists have been, are and will always be there to cast doubt on these convictions. *Fountain* by Marcel Duchamp, dated 1917, is a perfect illustration of this. It's one of the most controversial works of the 20th century. At the time, Marcel Duchamp was a board member of the Society of Independent Artists, founded in December 1916, of which any artist could become a member by

completing a simple form. For its first exhibition, held in New York, the American Society allowed any member to exhibit an object of their choice, provided they pay a fee of six dollars. The idea was that no artist could be refused for aesthetic–by nature, subjective–reasons. Marcel Duchamp decided to send, as a sculpture for the exhibition, a porcelain urinal, signing it 'R. Mutt, 1917' (Mutt being an alteration of Mott, in reference to the name of the company, J. L. Mott Iron Works, that had provided him with the sample). The work was not exhibited on the pretext that it was not a work of art. This refusal stirred up controversy–and the resignation of Duchamp from the Society. His intent had been to question who can decide what is and what is not a work of art. Walter Arensberg, executive director of the American Society, argued that, aside from the fact that Richard Mutt had paid his admission fee, a beautiful object had been revealed once it had been stripped of its use-value.

This idea that it's the viewer who decides whether or not what they're looking at can be considered a work of art is an extremely powerful one, and ties in with Jean Piaget's constructivist theory of cognitive development.[9] This school of thought states that the world as we perceive it doesn't exist in absolute form, but rather, there are as many representations of it as there are individuals, each of whom plays a very active role in the construction of this representation. Our experience, our beliefs, our fears and aspirations–everything that makes us who we are as human beings–will affect how we perceive the world. We could call it the Monopoly theory.

When we play Monopoly with friends, no matter how old we might be, we're always convinced we know the rules of the game. These are the rules we learned when we were little. Surprisingly, no one else seems to be playing by the same rules, nor are they even willing to question them. So, we often find that we disagree about what each player has the right to do or not do: after how

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9. Jean Piaget was a biologist, psychologist and epistemologist known for his work in developmental psychology and epistemology. He worked extensively on child development.

many turns are you allowed to buy properties? When are you able to get out of jail? And so on. Without placing too much importance on this, it does highlight the fact that what we were taught as children may not be true–or at least, our beliefs may not be shared by others. At what point do we have the right to question what we've been taught, what makes us who we are and determines what we do?

If we want to enjoy greater freedom of thought and action, we must start by calling into question all the information and knowledge that we've used to build the spuriously solid edifice of our beliefs and convictions. A sequence from *The Matrix* expresses this particularly well. When Neo (Keanu Reeves) is learning kung fu with Morpheus (Laurence Fishburne), his biggest challenge is not acquiring knowledge, but breaking free of his limits. When Morpheus sees that Neo is still too slow–and to help him understand that, as he's in the equivalent of a video game, the limits he's up against are actually imposed by his own mind–he hits him with this thought: 'You think that's air you're breathing now?' By debunking this most fundamental belief, he helps him understand that nothing he believes in is really true, which opens up an infinite number of possibilities. So, how can we, too, question our beliefs in order to regain our original freedom?

One of the most effective ways to begin freeing ourselves of our beliefs–whether or not they've been conducive to our development– is to identify them, in order to try to understand why we do what we do. We'll then realize that:

–A lot of our behaviours are based on old habits that may have been in place for centuries but that no longer serve any purpose. Yuval Noah Harari explains in *Sapiens* that men used to grab fruit as soon as they saw it in the trees because they liked the sweetness, but they had no means of preserving it. Could it be that our bad habit of finishing a tub of ice cream in one sitting, unable to spread our enjoyment out over time, comes from this ancestral desire to make the most of the moment?

–A lot of our behaviours and decisions are based on beliefs and convictions that have been passed on to us by others, and we've adopted them without ever questioning them. We could call this the Monopoly syndrome. Have we ever actually looked up the rules of the game? What prevents us from checking them ourselves, for ourselves?

To be open to all opportunities, whether presented to us by life or by our own abilities, we need to learn to take a fresh look at every situation. This has a lot to do with rediscovering a childlike originality and the ability to introduce a fun dimension to every situation.

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Learning through playing

Learning is experience. Everything else is just information.
Albert Einstein, physicist

My various piano teachers have taught me many things about learning how to learn. I've been taking lessons, both classical and jazz, since I was 12 years old. I've entered competitions and played in bands. And I've experienced two distinct types of learning. The first, probably the most widespread in France, involves becoming an expert in music theory (reading the notes, understanding harmony, rhythm, etc.) before learning to play any piece. This is the way of learning that's advocated by the French national education system and its traditional institutions and followed by its vocational training methods with their well-known format: someone else has knowledge, we listen to them, then we repeat it.

The second type of learning involves actually playing. This method is more widespread in American music schools. Basically, you choose a piece of music you like and you try to play it. In doing so, you'll have to learn to read the notes, understand the harmony and follow the rhythm dictated by the piece, but you'll be learning

while you play. This type of learning follows the model known as '70/20/10', which was formalized in the mid-1990s. The result of research conducted by Morgan McCall, Robert W. Eichinger and Michael M. Lombardo, who observed the way in which American managers learn, this model shows, in essence, that 70 per cent of our knowledge is acquired through practice and experience, 20 per cent through our social interactions and 10 per cent by following a traditional, more formal training course.

Too often, it's been understood in a simplistic way, encouraging people to think that formal learning is useless, which is untrue. What we're really talking about here is striking a balance. It's necessary to have a certain amount of knowledge of music theory (there are bars, chords, etc.)–10 per cent of formal training provides at least the foundations from which to progress–but such knowledge can really only sink in when it's put into practice, either on your own or with others, for the simple reason that only repetition can firmly establish knowledge. Without practice, we soon forget what we've learned.

The method that involves learning the theory before being able to play–and therefore enjoying it–certainly provides a solid base, but it makes the player very dependent on their theoretical knowledge. If you forget a rule–which has happened to me often–you can feel paralysed and dare not put your fingers on the keyboard. Like an actor who has worked hard on their lines, you need to 'get away from the script' and start thinking in terms of portraying emotions. To be able to do this, you'll have to acquire sufficient knowledge or expertise, and this takes time–and practice.

The second way of learning is immediately more fun and rewarding–something the English language indicates perfectly: we 'play' an instrument'. As we launch into our chosen piece, feeling our way and starting to pick up the first notes and harmonies, we're more quickly rewarded and reminded why we wanted to learn to play in the first place.

This small recompense encourages us to learn more, to keep going and learn to play a second piece, then a third. We're inspired by

pleasure. Of course, this doesn't necessarily prevent us from learning the theory behind it as we progress (the famous 10 per cent), which will later give way to more opportunities.

The learning-by-doing approach is widespread in Finland, but also in Shanghai, where the new buzzword in classrooms is 'SaaS', which stands for School-as-a-Service.[10] The idea is to consider school as a place where students go to work together or with teachers. This is a place of group work. The city itself becomes the real learning space: why not hold literature classes in a bookshop? Or chemistry classes in the laboratory of the neighbouring university?

Here, students become responsible for their own learning in an active and productive environment, which encourages their involvement. There is obviously the question of the availability of third places in towns (especially rural ones) and of cohesion within the area, but the approach remains interesting, nonetheless. This notion of breaking down the barriers separating school from real life is also behind Big Picture Learning,[11] a model that has already been implemented in some 50 schools in the United States.

I can personally confirm the value of learning in real-life situations from my time learning to surf. I thought I would have to repeat movements on the beach for hours before the teacher let me into the water. I was completely wrong. After three goes on the sand, he said, 'OK, that's fine; into the water.' When, supported by my traditional education, I objected that I wasn't ready, he simply replied: 'You're not likely to be ready while you're on the sand; it's in the water that you'll learn.' By 'de-dramatizing' the difficulty of surfing the first wave, he helped boost my confidence in such a way that I managed it after a few tries.

When we condition ourselves to believe that something is complicated, it becomes just that. The opposite is equally true. So, to learn

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10. To learn more: https://www.espooinnovationgarden.fi/en/espoo-inno-vation-garden/media/news/school-as-a-service-concept-is-the-best-finnish-school-innovation/ (accessed May 2019).

11. To learn more: https://hundred.org/fi/innovations/big-picture-learning (accessed May 2019).

to do something, why not just get started and try it? If possible, with others. In fact, if we go back to the example of music, it's when we play with other musicians that we really test out how good we are. Even if the piece is very simple, others probably learned to play it differently from us, which is quite likely to knock us off our stride. It's the moment of truth, which either confirms the solidity of our skills or reveals our need to do some more work. That's why collaborating with others is so important.

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Learning through collaboration

To know oneself is to study oneself in action with another person.
Bruce Lee, martial artist

Lots of comedians have said in interviews that they discovered their talent when they saw themselves through other people's eyes. Some seem to almost take pride in relating how poorly they did at school. But then, they tell us, they discovered they had a gift for making their classmates laugh. By right, those fellow students should be receiving royalties from their shows, because they served as a mirror to these comedians, reflecting a unique talent they might not have been able to discover sitting alone in their bedroom.

Without outside observers, it's extremely difficult–perhaps even impossible–to become aware of our singularity, because by definition, our behaviour seems normal to us. We're used to our cognitive biases, to our offbeat or strange behaviour. At best, we might be aware of carrying out a task or doing an activity differently, but most of us think what we're doing is normal and that other people are the ones behaving oddly–even if these others significantly outnumber us! The character of Charles Xavier in the *X-Men* series highlights this well. By keeping a watchful and attentive eye on the mutants, he enables them to become fully aware of their singularity. He manages

to detect the flashes of brilliance that reveal the uniqueness of each one.

For this approach to be truly effective, we need to learn to receive feedback well. It's important to see it not as judgment but as information about ourselves. Céline Alvarez conducted an experiment over the course of three years in a nursery school in a disadvantaged area in Gennevilliers, a northern suburb of Paris. She discovered, as she relates in her book *The Natural Laws of Children*, that humans are social beings who need interaction, activity and cognitive stimulation to maintain their plasticity and learn. The human mind is designed to be enriched, in a conscious and tangible way, by real life. Moreover, our uniqueness has true value only if it contributes to the wider community, otherwise what's the point?

The notion of social bonding is at the heart of the pedagogical approach advocated by Ovide Decroly, a Belgian teacher, doctor and psychologist born in 1871. According to him, the priority of school is not to transmit knowledge to students, but rather to help them develop their personality and adapt to society.

This importance of collaboration in discovering our singularity and learning how to express it in a group is very well illustrated in *Breakfast Club*, the 1985 film by John Hughes. The story takes place in an American high school and relates the adventures of five teenagers who have nothing in common but find themselves doing eight hours of detention one Saturday.[12] Claire, the popular 'daddy's girl' princess; Andy, equally popular, but for his athletic prowess; Brian, the archetypal socially awkward nerd; Allison, the insecure girl, slightly weird, who clearly lacks friends; and, of course, the classic rebel character, Bender, a loud-mouth but sensitive.

They're faced with Mr Vernon, the assistant principal, who's a bit sly and totally jaded. He gives the teenagers the following essay question: 'Who do you think you are?' Over the course of the day, boredom is followed by jibes, then by the revelation of another

12. 'Breakfast Club' is an American euphemism for those who are in school at the weekend for detention.

hidden, side to each of them. The ending is symbolic of the malaise of a misunderstood generation (but then again doesn't every generation feel misunderstood?). The conclusion of the film is a beautiful parable of the notion of collaboration, as Brian, the 'brains' of the group, writes an essay extolling their complementarity and stating that if they knew how to combine their different abilities, they would make the perfect human being! And that's the whole purpose of collaboration: to be enriched by the differences of others so that we can tackle situations we wouldn't be able to handle alone.

While learning how to learn is an essential skill that gives us freedom to broaden our horizons, explore different areas and express our singularity in many ways, it also relies on another key skill: the development of critical thinking.

The Dead Poets Society school

DEVELOPING CRITICAL THINKING

Carpe diem. *Seize the day, boys. Make your lives extraordinary.*
John Keating, teacher, *Dead Poets Society*

Dead Poets Society, Peter Weir's 1989 cult film, tells the story of Todd Anderson (Ethan Hawke) and his friends at the prestigious Welton Academy, known to be one of the most elite and serious prep schools in the United States. They meet a strange English teacher, Mr Keating (Robin Williams), who tries to pass on his great love of words, prose and poetry to them. He also tries to inspire them to think for themselves and reject the established order, and he winds up helping them discover who they are. His valuable advice turns their lives upside down. The film shows, magnificently, that critical thinking is a pass to freedom. It enables us to venture on a thousand paths without ever getting lost and teaches us how to analyse situations and what they can bring to us, or not, without fear of being unduly influenced by others or allowing them to impose their ideas

on us. Incidentally, Steve Jobs used to say, 'Don't let the noise of others' opinions drown out your own inner voice'.

Keating explains the importance of listening only to ourselves in making our own way in life–with the proviso that we're equipped with a good critical mind. 'Now, we all have a great need for acceptance. But you must trust that your beliefs are unique, your own, even though others may think them odd or unpopular, even though the herd may go, "That's baaaaad." Robert Frost said, "Two roads diverged in a wood and I, I took the one less travelled by, and that has made all the difference."'

But how can we acquire this critical thinking, which is so indispensable in developing our uniqueness and our ability to make our own way in life?

<p style="text-align:center">*</p>

Discerning true from false

Now in my class, you will learn to think for yourselves again.
You will learn to savor words and language!
John Keating, teacher, *Dead Poets Society*

Being able to discern true from false is probably one of the key attributes of any critical mind. The subject is particularly relevant in these times where fake (distorted or truncated) news is invading the Internet and misleading so many people. How can sensible people 'swallow' news that's sometimes just so preposterous? To put it simply, they just don't question things enough, or their critical mind isn't sharp enough.

In *Dead Poets Society*, Keating invites his students to constantly question their convictions: 'Just when you think you know something, you have to look at it in another way. Even though it may seem silly or wrong, you must try. Now when you read, don't just consider what the author thinks, consider what you think. Boys, you must strive to find your own voice. But the longer you wait to begin, the less likely you are to find it at all.'

Which aligns with the thinking of French philosopher Émile Chartier, commonly known as Alain: 'Thinking is saying no'. Critical

thinking is less about being able to perfectly frame an argument than about examining the assumptions on which our reasoning is based. Most doctors agree that people suffering from paranoia are perfectly rational in their thinking, but that their reasoning is based on false assumptions. To avoid becoming paranoiacs who don't know who they are, we need to constantly reassess things we take for granted as being true without ever having called them into question.

Yves Robert's comedy *The Tall Blond Man with One Black Shoe* shows, in the most hilarious manner, the way in which rational thinking based on false assumptions can have catastrophic outcomes. The comic thrust of the film lies in the fact that members of the secret services (Jean Rochefort, Bernard Blier, Robert Castel, etc.) are convinced that François Perrin (Pierre Richard) is a very dangerous spy who must be eliminated, when he is, in fact, just a professional violinist with the misfortune of being in the wrong place at the wrong time. The upshot is that they closely observe his every move and interpret everything in completely the wrong way because they're attributing motives to him.

In his *Chronicles of a Liquid Society*, Umberto Eco talks about the importance of questioning the information we receive. He explains that when information is freely available, the challenge isn't in accessing it but in learning to ask the right questions, the sort of questions that will help us avoid being manipulated by others, whatever their intentions, and base our decisions and actions on our own choices.

Personally, I'm confronted all day long with this need to discern true from false. I receive a lot of information from many people, about clients, colleagues and prospects. As a young manager, I would often react quickly to new information, which frequently created a lot of problems, because the information that I'd been provided with was sometimes false, or at least very subjective (and therefore incomplete). Over the years, I've avoided becoming the kind of person who constantly doubts everyone and questions everything, but I have learned to take a necessary step back. I try to put the information I've received in perspective; I examine what I already know about a subject (hence the usefulness of experience and culture) and

cross-check it with other information before acting in accordance with the knowledge I've learned from my mini-investigation.

Exercising a certain amount of suspicion is a good thing in helping us form an opinion on the information conveyed. However, we do need to be wary of our own biases because they can lead to wrong interpretations. A Japanese scholar, Shigehisa Tsuchiya, has explained that, because we see the world only in light of what we already know, we can easily become like automatons. To test the veracity of this theory, we need only flick through a favourite newspaper or magazine. We'll tend to find ourselves reading articles on topics we already know something about or have an opinion on rather than venturing to read about subjects we know nothing about. It's as if we were interested only in what we already know. Indeed, this seems quite normal, because what we don't know doesn't spark anything in particular within us. But then, how can we gain new knowledge if we're forever skipping over the pages that contain information that's new to us? The same sort of thing occurs in the evening. We flock to people we already know, at the risk of missing out on new friends, perhaps even the man or woman of our life.

The challenge in trying to evaluate the veracity of received information is to compare it with what we know to be–or at least believe to be–true, while remaining open to the unknown and the unfamiliar. The broader our knowledge base, the easier it will be for us to discern between true and false. Improving our cultural knowledge thus becomes indispensable in developing a critical mind.

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Improving your cultural knowledge

No matter what anybody tells you, words and ideas
can change the world.
John Keating, teacher, *Dead Poets Society*

As a Frenchman, when I think about culture, I think about Bernard Pivot and his prime-time TV talk show *Bouillon de culture*, the French

cultural and TV magazine *Télérama* and Rive Gauche intellectuals at the Café de Flore debating the supposed positions of this or that Belarusian author concerning the Crimean war.

In other words, we can all have the sense that culture may not be for everyone and that perhaps it's not for people like us, who eagerly await the next season of our favourite series on Netflix and pore over lifestyle magazines such as *Vanity Fair*, *Cosmopolitan* or *GQ*. But this is biased thinking! In fact, culture refers not only to a set of 'highbrow' works aimed at an elite, but also to the films and TV series, songs and artists of all kinds (to which extensive reference is made in this book) that form the backdrop to our lives and make up what we call pop culture. It forms a foundation that can help us discern true from false and develop critical thinking, based upon which our freedom can grow impartially.

However, this biased thinking is explained by the fact that, while culture belongs to all of us, access to it is all too often reserved for the few, in view of their place of birth or their social class. Reading demands time, which we don't all have in equal quantity. Travelling and exploring other cultures and civilizations requires money. We're unlikely to visit museums and exhibitions unless we've acquired the habit of doing so–or at least are prepared to try them out–which is not always encouraged by the circles we move in. However, it is an effective lever to improve the so-called 'equal opportunities' we like to talk so much about.

Initiatives such as *La petite bibliothèque ronde* (the little round library) in Paris caters for children for whom access to culture may be difficult. Fighting against unequal access to art and culture is one of the aims of this library based in Clamart (Hauts-de-Seine). Children can grab any book and ask one of the librarians to read it to them. The effort associated with reading is thus reduced and the children gradually get a taste for it and may want to read their chosen books themselves, or even read excerpts or an entire story to others. In addition, the library regularly sets up sessions where children can meet artists and organizes art projects to which children contribute before presenting them to their parents.

The desire to improve our culture relies on one essential quality: curiosity, and for this to be aroused, we sometimes need to find pretexts. A friend who used to teach 11–15-year olds in a deprived area was explaining to me recently that he would have great difficulty getting his students to read. He realized that they never read the books he gave them–until the day he understood that it wasn't because they didn't want to read, but simply because they couldn't see the point. So, he decided to link reading with projects. For example, he organized a visit to a prison to raise awareness among his students of the condition faced by those who had wound up there. Before taking them there, he managed to get them to read a lot of books on the prison environment, because they suddenly had a reason to be interested in the subject. Reading was seen as an opportunity to better understand what they were going to see.

The same is true for all aspects of culture. The arts, for example–whether it be painting, music, film or literature–always become more interesting when they help satisfy our curiosity or fuel our reflection. I experienced this again during the (long) months of writing this book. The few occasions I went to the cinema were extremely useful to me because they fuelled the process of introspection, exploration and reflection I was immersed in! In its own way, and to my surprise, each film provided part of an answer to one of my questions. The most striking case in point was *Isle of Dogs* by Wes Anderson. This seemingly innocent animated film is a highly illustrated narrative about how a society's choices shape its future–which was central to my reflections.

When we have a goal, improving our cultural knowledge is no longer an effort but becomes an exercise we enjoy on a daily basis because it serves our purpose. That said, curiosity is also simply wanting to grab a book and immerse yourself in the author's world, just for the pleasure to be had by setting off on an imaginary adventure and discovering other places.

The knowledge base that's gradually formed by improving our culture allows us to analyse information, discern true from false, frame an argument, forestall attempts to manipulate us and explore

new opportunities without ever getting lost. We nevertheless need to ensure that we maintain a critical perspective, even with regard to the intellectual, artistic and scientific sources we draw from. And, if we're to remain totally free in our thinking, emotions and choices, we'll sometimes need to challenge them.

<p style="text-align:center">*</p>

Challenging the powers that be

<p style="text-align:center">'Oh, I live to be the ruler of life, not a slave!'
Boy (quoting a poem by Walt Whitman), Dead Poets Society.</p>

Like it or not, our critical thinking is heavily influenced by prevailing ways of thinking in our society and by existing authorities, which sometimes prevent us from being fully ourselves. Where once it was religious powers that held sway, now it's consumerist, political and artistic ones. Our critical mind is urged to 'bow' to these powers that be and to hold the information they convey as 'gospel'.

As Yuval Noah Harari explains in *Homo Deus: A Brief History of Tomorrow*, we live today in a world governed by data flow (he calls it 'dataism'). The computing power of machines and the multitude of information available–from social media, our smart devices, etc.–give us insight into the world that no human being has ever previously been able to provide. This can lead us to believe that our opinions are worth less than these 'dataist truths'. This is obviously untrue. Data, because it comes largely from people like you and me, should not influence us any more than the opinions of so-called experts in a given field. While our GPS has, undoubtedly, very good knowledge of the fastest way to get us from point A to B, supposedly 'smart' applications such as Once, which is designed to present us every day with a person likely to appeal to us, still have a lot of progress to make. And even if our GPS is right, it's not likely to be able to guess the route that we'll most enjoy taking, which may not be either the fastest or the shortest. Data is there to help us achieve efficiency, rarely pleasure.

In an emotionally powerful scene in *Dead Poets Society,* Mr Keating invites his students to get up on their desks and repeat: 'I stand upon my desk to remind myself that we must constantly look at things in a different way.' He wants to remind them of what they'll need to do if they're to chart a path in life that's uniquely their own.

Developing critical thinking involves calling into question the authorities that supposedly possess the truth and learning by ourselves, for ourselves. After all, we're better placed than anyone else to know what works for us and what doesn't. This is very well explained in the book *The Code of the Extraordinary Mind*, by Vishen Lakhiani. The author tells us that we need to become 'hackers' of our lives by learning to question everything. According to him, we're so immersed in our culture that we don't realize that we're subject to fairly arbitrary rules. Apart from things that are indispensable and common to all (such as sleeping, eating and reproducing), most ways of behaving and thinking are based on customs that have no inherent value or sense other than those we choose to give them.

Institutions such as marriage, money or religions are merely long-established rules that meet a need, but whose variations can be infinite and whose very reason for existing can be questioned. Following these rules without questioning their validity leads to a sort of social determinism that considerably limits our potential.

Scientific studies revealed that women working as cleaners, despite spending their whole day exercising, didn't benefit physically from their increased activity and that their physiological data was almost identical to that of someone more sedentary. However, once they learned to see their activity as an effective and automatic way of exercising, their physiological data improved exponentially: their minds had changed and their bodies followed suit.

Beliefs are like the operating system of a computer, while a way of living is like a simple application, which explains why it's easier for us to change our lifestyle than our beliefs. The real change occurs when we upgrade or change our operating system. Hence the importance of developing critical thinking so that we can resist external pressures and follow our own patterns of thought and reflection.

While developing our critical thinking is an indispensable component of our left brain, creativity is an essential element of our right brain. Providing ourselves with the means to be fully ourselves involves learning to work with both sides of our brains, in order to increase our potential to the maximum.

Michel Gondry School

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RELEASING YOUR CREATIVITY

To create is to give form to one's destiny.
Albert Camus, writer

To make our own way in life, we have to be very creative. Without this secret weapon, there's little chance of escaping the 'tyranny of the average' that Todd Rose describes in his book *The End of Average*. Following the paths traced by others tends to lead us back to the ways of functioning that dominate in society. Creativity is the secret to getting off the beaten track, giving us the chance to cut our own path. Creativity can build bridges between places that have never been linked–what Peter Drucker calls 'creating connections'.

Many artists illustrate perfectly what it means to be creative. Prince, Madonna, Serge Gainsbourg, David Lynch, Kathryn Bigelow: all are (or were) renowned for their ability to explore different genres and follow roads less travelled. Like the mathematician Pythagoras, who recommended: 'Declining from the public ways, walk in unfrequented paths.' Michel Gondry occupies a unique place in the creative landscape. He's widely known as a director of music videos and films. In particular, he's created music videos for Björk, the Rolling Stones and Massive Attack, and has made such out-of-this-world films as *Eternal Sunshine of the Spotless Mind* and *Be Kind Rewind*. He's also a screenwriter and artist, who uses the same material as others but in very inventive ways.

In the 1990s, when morphing was at its height, enabling the image of a woman to be transformed into a man or a cat into a dog, Gondry was using this technique in his music videos to bring inanimate objects to life. He also created a 'factory', providing cameras, costumes, scenery and so on to anyone wanting to make short films. This son of an inventor has a talent for creating special effects with odds and ends. Although he can command big budgets for his films, he prefers to make do with less, because it forces him to be more inventive and creative. And that's exactly what makes this artist so special: he shows us that it's possible to do a lot with little if we give free rein to our creativity.

In one of his lectures, Ken Robinson explained that we all have tremendous talents at birth, but that the education we receive tends to stifle rather than develop them.[13] This waste of talent occurs when we lose our ability to be creative, and the main reason for this is that we fear getting it wrong. Mistakes are not valued in society in general, and in our education systems even less so.

This 'loss' of creativity is demonstrated by the results of a test developed for NASA, which was applied to 1,600 children aged four or five.[14] Dr George Land explains that, when asked to come up with new, different and innovative ideas to solve a number of problems, 98 per cent of the children showed a real ability to think outside the box. Five years later, these same children, now 10 years old, were asked to participate in the test again. This time, only 30 per cent came up with innovative solutions. And when they retested the children at the age of 15, the results fell to 2 per cent. School had played a part in this. The obvious question is: can we recover our 98 per cent? And, if so, how?

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13. Conference available on the TED website: https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity?language=fr (accessed April 2019).
14. To learn more: https://www.ideatovalue.com/crea/nickskillicorn/2016/08/evidence-children-become-less-creative-time-fix/ (accessed May 2019).

Meditating

The real music is the silence and all the notes are
only framing this silence.
Miles Davis, trumpeter

Notions like creation, invention and intuition are closely related to each other. Invention is perceived as a new assembling of elements that already exist, whereas creation is something more mysterious. Like intuition, it emerges from a sense we get and often catches us unaware. We feel there's something calling for our attention that we need to get a hold of, without really knowing what it is. Without getting too far into the subject, which is beyond the scope of this book, we can be sure of one thing: we need to free up some mental space for creativity to be at all possible. Creating this space is the purpose of meditation.

Meditation has made significant breakthrough in our societies. Whereas only a few years ago, anyone talking about yoga or meditation was seen as a 'visionary', or even a member of a sect, meditating is now considered an important part of life, like exercising or healthy eating. Countless magazines display young women in a meditation posture on their covers, and the practice has even found its way into classrooms. The SEVE foundation, whose main purpose is to develop skills that will enable children to be and stay happy, tries to introduce young people to this practice. It considers that there's no minimum age for meditation, but that children are, in fact, very receptive to the practice and that meditation makes it possible to create an 'available space'. Meditation thus becomes a morning ritual that's practised at school from an early age.

It has also entered the business world. Marc Benioff, Chairman of the computing company Salesforce, was one of the first to call in

mindfulness practitioners,[15] including Deepak Chopra, for seminars, sometimes assembling thousands of people, in Las Vegas. There are few stranger sights than seeing this prominent figure of the New Age movement asking ambitious young executives to take a moment to breathe, focus inward and feel their consciousness open up, as though the jar in which it had been enclosed was being enlarged. Would that have been possible 20 years ago? Or in the 1980s, when *Dallas* was somewhat more popular than the videos of Pema Chödrön, an American Tibetan Buddhist and author of several books? There are also applications for those who want to have a go on their own, with the help of a virtual instructor. Thich Nhat Hanh is another authority on the subject and his books give practical and simple-to-follow tips for beginners.

In short, our current age–despite the apparent extroversion encouraged by social media–is open to introspective listening. Meditating doesn't mean sitting cross-legged, levitating above the ground and being able to 'feel the Force' like a Jedi, but simply learning to become familiar with our own psyche. Becoming fully aware is like being in the cockpit of a plane from which we can observe life and move ahead. When this (re)awakening happens, we're giving ourselves a chance to listen to our inner self and our natural inspiration and to allow new ideas to come to the surface. We're also allowing our natural creativity to re-emerge.

In addition to creating this space within ourselves, there are other steps we need to take in order to expand our creativity. One of them is to break with our habits.

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15. The goal of mindfulness is to anchor ourselves in the present moment and to become more aware of what's happening within our mind, emotions and body.

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Breaking habits

Better to pump even if nothing happens
than to risk something worse happening by not pumping.
The Shadoks, philosophers[16]

A personal experience has forever convinced me of the importance of breaking with old habits so that we can express our creativity. I had to go to Stockholm for a meeting with a Swedish client one Tuesday in December. The day before, during a board meeting, a recurring question was raised about how we might develop our product on a specific functional level. Although very interesting, the question remained unanswered yet again. A few hours later, in the early evening, I took off for Sweden.

On the plane, I was talking about this and that with the Swedish man sitting next to me, noting the little things that make other cultures interesting. After taking the Arlanda Express–a train so hi-tech that for a moment I felt like I was in *Total Recall*–I arrived at the station, where I rediscovered the joys of Burger King (at the time, the franchise hadn't yet established itself in France). I'd already eaten on the plane, but nostalgia got the upper hand. After getting lost in the snowy streets of Stockholm, I finally arrived at my hotel around midnight. I was pleased to find a very well-decorated room, albeit without a window (a reminder of why Hotels.com offers attractive prices). And there, in the middle of the night–eureka!–I got the answer to the question that had been asked during the board meeting. I'm not even sure whether I was sleeping or half awake. It was a solution so obvious, so simple, that I spent five minutes wondering why I hadn't thought of it before. I examined the solution, bouncing it around a

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16. The Shadocks, stars of the French animated TV series first broadcast 1968–74, were birdlike characters renowned for their ruthlessness, their stupidity and, in particular, for their seemingly pointless and endless pumping. In the UK, the series was shown on Thames Television in 1973.

bit to make sure it really would resolve the problem, and decided that not only was it a perfect solution but it was also probably a real innovation! At that moment, another question sprang to mind: to what extent had this business trip and the small cultural differences contributed to the emergence of this idea?

Like it or not, our daily life tends to lock us into certain routines and ways of thinking that considerably limit our creativity. To break new ground, we have to break out of our usual environment and frames of reference–to think 'out of the box', as we often say. But how can we think differently when we're 'prisoners' of our own daily life? The only option is to create gaps in our routines to allow new situations and new ideas to emerge. Why not start by changing the route you usually take to get to work? Or by buying and reading a different newspaper? Or by selecting a different TV channel on your remote control and watching an arts programme rather than a documentary? And so on. The idea is to welcome surprises, the unexpected, even if we often fear rather than hope for them. Faced with the unforeseen, all that remains is for us to give free rein to our imagination–which might be the hardest thing to do.

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Giving free rein to your imagination

Imagination is the power that enables us to empathize with humans whose experiences we have never shared.
J. K. Rowling, writer

In *Harry Potter and the Deathly Hallows*, volume 7 of the Harry Potter series, we can read this dialogue between Harry Potter and Dumbledore: "Tell me one last thing," said Harry. "Is this real? Or has this been happening inside my head?" "Of course it is happening inside your head, Harry, but why on earth should that mean that it is not real?"' The imagination is a key catalyst in helping us discover and express our singularity. Our dreams, whether daydreams or

occurring at night-time, have things to tell us about ourselves! Even as children, each of us has dreams that are different from those of others. These imaginary adventures are like a scroll on which we can read about who we are, what matters to us, our ambitions, our fears, our aspirations and our anxieties.

When we talk about dreams, certain films that centre around them spring to mind. In 2013, Ben Stiller directed and starred in *The Secret Life of Walter Mitty*, the story of an office worker with a dreary life, who finds that the only way he can experience life to the full is through his dreams. Before the plot of the film takes him off on some real adventures.

The earlier *The Science of Sleep* by Michel Gondry also tells the story of an office worker who relieves the boredom of his dreary day-to-day life by daydreaming. The film goes even further than Ben Stiller's because the plot hinges partly on a love story between the hero, played by Gael Garcia Bernal, and the character played by Charlotte Gains-bourg. The two of them, bored with the reality of their daily lives, get to know each other and form a romantic relationship through their imagination and their creativity. It's as if their imagination helps them express their true selves more than real life can.

Incidentally, John Lennon wrote 'Imagine', considered one of the best pop songs of all time, to express his vision of a peaceful world, secretly dreaming that the song would help bring this about. He was convinced that 'a dream you dream alone is only a dream. A dream you dream together is reality'.

Dreams are launching pads. They allow us to express what we suppress in life. We may do this for all sorts of reasons: because we're shy or have trouble expressing our feelings, because the opportunity to do so just doesn't present itself, or because nobody really knows how to listen to and understand us. But most of the time, the problem lies within ourselves and our staggering tendency to negatively judge our ideas before we've even finished expressing them. Without a doubt, judgement is the sworn enemy of the imagination, because it prevents the free flow of our creativity.

An American friend, who received all his education in the United States but whose children went to school in France, told me that

in the US, when a teacher asks a young child to draw a dog and they produce a picture that vaguely resembles a somewhat different sort of animal, the teacher will say to the child, 'That's an amazing dog you've drawn!' In France, give a child of the same age the same exercise, and the teacher is more likely to tell them, 'That's not a dog, try again!' Obviously, I'm overgeneralizing–there are undoubtedly very empathic and very antipathetic teachers on both sides of the Atlantic–but, these two attitudes describe a relationship to creativity and judgement that's quite different.

Some very interesting studies have shown that our brain operates in two modes: one is called 'divergent' and the other 'convergent'.[17] Divergent thinking is used by the imagination to create new possibilities. We can imagine it as a road on which we're heading towards a range of options. Convergent thinking is used to judge, make decisions or evaluate. This is more like a road on which we brake to stop at a specific place. Both ways of thinking are, of course, very useful

because they meet different needs, but the problem is that they tend to function at the same time! We therefore need to learn to order them and ensure that they don't hinder each other. I see this simultaneous operation every day in my company. When we organize a brainstorming meeting with the aim of encouraging as many ideas as possible–no matter how far-fetched or unrealistic–there's always someone in the room who'll say, 'No, we've already tried that and it didn't work', or 'No, that's a stupid idea', or 'That's impossible'. I've also noticed something similar when I'm sitting at my piano to do some jazz improvisation. Before finding a good pattern or riff (a phrase that's repeated and can be used in different contexts), it's essential to try out lots of ideas, not all of which will be harmonious. Immediately, however, I'll hear a little voice in my head whispering to me 'oh no, that's no good' or 'wow, that's really dreadful'. It's impossible to hit on something good first time; I have to fight against that voice and accept the need to explore all sorts of avenues before

17. To learn more: https://www.youtube.com/watch?v=cmBf1fBRXms (accessed July 2019).

I discover a good one. The same thing is true with writing. For this 300-page book you have in your hands, I probably wrote 400 pages, discarding the rest. That doesn't mean those 100 pages were rubbish but rather that they enabled me to reach the final result.

Our propensity to curb our creativity is impressive. Our problem is not our lack of ideas, but rather the tendency we have to convince ourselves that they're silly. We're often better at convincing the other person that their idea is bad than at convincing them that ours is good!

When we become aware of this and dare to give full rein to our imagination, we realize that 99 per cent of so-called silly or impossible ideas are simply ones that no one has yet managed to implement. That's all! Pablo Picasso confirmed this when he said: 'Everything that can be imagined is real.' So, let's not allow anyone to stifle our inner voice, our singularity, and let's release the creative potential that's in all of us to find the path that's uniquely ours!

Then there remains the difficult task of following this path when we're the only ones taking it.

The X-Men school

ACCEPTING YOUR SINGULARITY

To accept your singularity is to build your life as a work of art.
Alexandre Jollien, philosopher

Discovering our singularity and finding ways to express it is one thing but accepting being different is quite another. We all know from childhood just how difficult life can be when we're different from those around us. Whether a child is autistic or gifted, they quickly find themselves isolated from the rest of the class, marginalized by both teachers and other students. Being one of those children who are classed as 'non-assessable', due to a wide discrepancy between results in the different disciplines, continues to be a handicap today.

In fact, while underachieving in verbal skills, such children may have abilities in logical or visual-spatial processing that are well above average (or vice versa). In cases of hypersensitivity, excessively powerful and uncontrolled emotions can disrupt a child's cognitive abilities during tests and cause confusion. Psychologist Fanny Nusbaum explains that high-potential children show increased brain connectivity, which may explain the ease with which they assimilate new knowledge and the great autonomy of thought that they often display in creating internal models of their own. Sensing, often rightly, that they're understanding quickly, their brains transition from learning to automatic reflexes, sometimes even before really having processed a notion. This can cause errors and produce inaccuracies, explaining uneven performance.

In the world of work, we speak of 'atypical profiles' to describe people who follow unconventional paths and don't function according to established norms (but established by whom?). It's almost as difficult for such people to find work and succeed in the workplace as it is for children with atypical brain functioning to integrate at school and follow a so-called normal curriculum. Schools, businesses and society in general have this in common: they tend to see only the flaws in such atypical profiles and miss their qualities.

However, what makes these people so unique can be a real asset that can be leveraged, if we learn to accept their singularity and put it to good use.

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Embracing your singularity

Beauty begins the moment you decide to be yourself.
Coco Chanel, fashion designer

The *X-Men* series provides a perfect illustration of the difficulty of accepting what makes us unique and, by definition, differentiates us from others. Indeed, the whole series is based on this idea. In the

1960s, Stan Lee and Jack Kirby imagined a world in which mutants are endowed with superpowers that, far from increasing their value to society, make them outcasts. Professor Charles Xavier, himself gifted with telepathic powers, travels the world in search of these mutants in order to integrate them into his school. He helps each of them to become aware of their superpower, to embrace and develop it, and to work with others to fight the forces of evil that are threatening the planet.

Under the guise of pure entertainment, these graphic novels actually have a message to tell. They point to the stigmatization of people who don't adhere to the norms defined by our societies. They also highlight the difficulty we all have in understanding ourselves and discovering what it is that makes us unique–a talent, an aptitude in a given field or an interest in a specific subject. And it underlines our need for support, so that we can not only fully understand our uniqueness but also learn to embrace it throughout our lives.

Superhero films in general show how, because of their superpowers, these different individuals must take on responsibilities they've not freely chosen. As Peter Parker's uncle says to his nephew (Tobey Maguire) in the first *Spider-Man* film, directed by Sam Raimi: 'With great power comes great responsibility'–blithely plagiarizing Voltaire, who coined the phrase. What he means is that his nephew has no choice but to make his powers available to society, even if doing so will prevent him from having a normal love life with would-be girlfriend Mary Jane Watson (Kirsten Dunst). Indeed, by definition, being different makes normal life more complicated, which explains why superheroes are rarely happy.

As we aren't superheroes, and we live in the real world, the issue is less about knowing what responsibilities we need to assume because of our singularity and more about the need to learn how to live well with, and make the most of, who we are, not only in our own interest but also for the sake of the people around us, and perhaps even for society as a whole.

The first step is simple: we need to understand that fighting against it is pointless. It's difficult, not to say impossible, to be something

other than who we are. It may be stating the obvious, but if we're honest with ourselves, we expend a vast amount of energy over the course of our lives trying to be like other people. We do so for a whole variety of reasons: because we admire them, because they seem to have a more enjoyable life, or because we feel we would be happier, more loved and more accepted if we were like them.

Secondly, we need to put the difference created by our singularity into perspective. Bear in mind that any difference is inherently contextual, linked to an era, a social class or an environment. When I was a child, my second cousin was looked down on by his family (particularly his parents and grandparents) because he often failed at school. In fact, the only thing that interested him was cooking. Eventually, his parents agreed to allow him to train to become a chef, and there he began to thrive. The mute child became a sociable, interested and cheerful young man. He'd finally found his way. He was still not held in high regard by his family, but at least he was doing what he loved. A few years later, and cookery programmes are multiplying on major television channels. *Masterchef*, *Top Chef* and the like have put chefs in the limelight, giving a real boost to the profession's image, and showing, too, that cooking is a science and should be respected as such. All of a sudden, my cousin is no longer an outsider. On the contrary, he's in a profession recognized by society, which has resulted in the long-awaited recognition by his family. Had he been born into a family of chefs, his choice would've been naturally accepted by his social circle. In a family of philosophers, he would've been stigmatized. It can be hard to distance ourselves from the way in which we're seen in our social milieu. This is why some people strive to disregard what other people think, while others go off in search of an environment where their difference will no longer be an issue.

There are no bad or good solutions, just what each person can, or thinks they should, do. Finding our own path, and seeking to be happy in being ourselves, inevitably means we'll face opposition. This will demand courage, tenacity and patience on our part. Our self-fulfilment will depend greatly on our ability to accept what

differentiates us, regardless of how others may view us. Without this ability, we run the huge risk of missing out on our own life while trying to live someone else's. In the words of the title of Raphaëlle Giordano's book: your second life begins when you realize you only have one.

The third step in accepting our singularity also helps us change the view that others have of us: it involves asserting our difference.

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Asserting your difference

Normality is a paved road: it's comfortable to walk,
but no flowers grow on it.
Vincent van Gogh, painter

Asserting our difference can be achieved through meeting people who not only understand but also help us. Take the case of autism, which is often still considered a handicap in our society. This disorder can be experienced differently if the person concerned receives support. Psychiatrist Laurent Mottron, an autism specialist, explains that while autistic people suffer from difficulty communicating with the outside world and from uncontrollable fears, autism is linked to what he calls perceptual over-functioning rather than intellectual disability. The problem is that the tests against which the intelligence of those with autism are measured are based on language, to the detriment of non-verbal tests such as Raven matrices (classic intelligence tests where the subject has to identify the missing element that completes a pattern in a series of diagrams). With these classic tests, 75 per cent of people with autism are classified as intellectually impaired, while in fact only 10–15 per cent of them are. In other words, such a method of evaluation brutally classifies individuals according to normative criteria without taking less widespread attributes into account. This is how we miss spotting different talents and ignore singularities!

As psychologist Paul Watzlawick has often explained (especially in *The Invented Reality*[18])–and researchers in cognitive sciences agree with him–our vision of the world is strongly conditioned by the way we interpret things, which itself is conditioned by the understanding we've acquired in the past. Thus, it's difficult for us to invite into our world–our 'isolation bubble'–people we're not immediately able to figure out, who don't correspond to our way of functioning, to our norm. But unless we do so, we risk overlooking some wonderful people who could open us up to other possibilities, other horizons.

According to Laurent Mottron, while those with autism don't fit a 'normocentric' attitude, they are able, for example, to relate the content of an article they've read two years previously with incredible precision, and may have a clear advantage over non-autistic people in dealing with complex tasks. The most famous example is that of the 'megasavant' Kim Peek, who inspired the main character of *Rain Man* (which won Dustin Hoffman an Oscar for Best Actor in 1989). Although given the mental age of a five-year-old in traditional tests, this man had a phenomenal memory and was able to recall entire symphonies and books. There's no doubt that such a memory capacity can be a great advantage in many situations.

Those who are exceptionally gifted also fall into the category of different people. Take Natalie Portman, Usain Bolt, Roger Federer or Sheryl Sandberg: it's clear that, in their different fields, each of them has 'something extra' that distinguishes them from their peers.

In a 2012 documentary,[19] French actor Daniel Auteuil appears both as an exceptionally gifted man (which is rather amusing given that he made his name in fairly lowbrow comedies) and as a hard worker. On the one hand, he claims that he works on his roles very little, preferring to rely on his instinct. When we see the result of his

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18. *The Invented Reality: How do we know what we believe we know?* Contributions to constructivism / edited and with commentary by Paul Watzlawick. New York / London: Norton, *c.*1984.
19. *Daniel Auteuil, dessine moi un acteur!* (in French only).

performances in *Jean de Florette*, *A Heart in Winter* or *The Adversary*, it's clear he has a gift. Directors interviewed in the documentary explain that the difficulty with him is not helping him get into his character, but rather not missing the moment where the magic happens, where you see him becoming his character and delivering his lines. They also explain that when they choose an actor like him, it's not about forcing him to become a character he's not, but more about revealing a facet of him that corresponds perfectly to the character. His gift lies in his ability to take risks and explore sometimes unknown aspects of his personality. On the other hand, Auteuil says he can train for eight months in sword-fighting or riding a horse when the role requires it. So, he's not an actor who simply rests on his laurels; he's also ready to re-evaluate himself and face new challenges.

When we listen to these film-makers talking about the way they direct Daniel Auteuil, it's clear that working with gifted people requires paying special, very personalized attention to them. And it becomes evident that school teachers and business managers don't have the necessary resources to support these different talents. This may be because they themselves don't have the appropriate skills, or because they've never been trained in this area, or simply because they don't have the time needed to devote to these people.

Most of us are probably neither autistic nor exceptionally gifted, yet asserting our singularity requires the same approach: trying to find a person or people who will see in us the qualities inherent to our singularity that others miss. We need to learn how to embrace and identify situations where, far from being problems, these qualities can prove extremely useful–and may even become our key asset.

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Making your difference your key asset

'Your boy's different, Mrs Gump', said Mr Hancock.
'Well, we're all different, Mr Hancock', said Mrs Gump.

In *Forrest Gump*, it seems to take the hero (played by Tom Hanks) a lot longer than other students to understand certain things. In the harsh modern world we live in he would be treated as simple-minded. In addition, he has a real physical handicap and needs to wear a metal leg brace to walk, which makes him even more different from the other children. What's astonishing about this film is that we can clearly see that the way his mother teaches him, her perception of him and the way in which she understands his differences have a decisive impact on how his life unfolds. About the leg braces he has to wear, she says: 'If God wanted everybody to be the same, he'd have given us all braces on our legs'. She wants him to understand that he's no more different from others than others are different from him. She accepts him and loves him as he is! Armed with this love and acceptance, Forrest gradually transforms his apparent weaknesses into great strengths, becoming in turn the top running back of an American football team, a table-tennis champion, a war hero decorated by the US President and so on.

Closer to home, the TV talent show *The Voice* highlights how a person's fragility often turns out to be their key asset. It's always amusing to see how some professionals, who are already making a living from their music, fail to convince the coaches. Their performance is impeccable, they sing well, everything is perfectly executed–yet it lacks that special something needed to appeal to the coaches. Conversely, teenagers with fragile voices, singing a few wrong notes, or playing an instrument a little less than perfectly, manage to get the four members of the jury to turn around. Most of the time, authenticity, fragility and timidity seem to be more important to the coaches than technique, however flawless. As French singer-songwriter

Pascal Obispo has stated: 'A good singer is someone who uses his vulnerability and makes it his main asset.'

Other famous examples support this. On his return from the army, Jean-Paul Belmondo met Pierre Dux, a new teacher at the École de la rue Blanche, after having been dismissed from the famous Parisian theatre school Le Cours Simon. The school's director, René Simon, had said to Belmondo, scathingly: 'My boy, you're not made for this profession. I can do nothing for you. You'll make a career at 50! In the meantime, join the army, before you're called up.' During a lesson, Pierre Dux, in turn 'complimented' him: 'With that face, you won't be able to hold a woman in your arms, it wouldn't be credible!' One of Belmondo's fellow sufferers, Bruno Cremer, then put forward an insightful theory: 'What if we've got something that others haven't?' When we look at the careers of these two great French actors, we can safely say that difference can, indeed, be turned into a great asset, as long as we believe in ourselves, and remain undeterred by put-downs from people blinded by the norm.

The list of people who have made their supposed weaknesses their key strength is endless, which goes to show that the main obstacle we have to overcome in making our singularity our greatest asset is ourselves!

In conclusion, then, we need to undertake a journey of self-discovery in order to find out what it is that makes us unique: our aspirations and talents, how we function and the way in which we see the world. This will require us to turn our gaze inward, to embrace our singularity and to accept ourselves, but also to dare to explore the choices the world offers us. Our ability to learn, our creativity and our critical thinking are assets that will help us move forward, little by little, on our own path through life. It may well be that work, far from being merely the cause of much frustration and suffering, is the shortest route to expressing our singularity and making it available to others and the wider world .

Work

FROM SUFFERING TO SUCCESS

Choose a job you love,
and you will never have to work a day in your life.
Confucius, philosopher

Few words express as much meaning as the word 'work'. Many authors, and countless articles, have tried to plumb the depths of its etymology. The Latin word for work, tripalium, refers to an instrument of torture that was used by the Romans to punish rebel slaves, which leads us to understand that work necessarily involves suffering. The Latin words labor and opus also refer to work. These words distinguish between, on the one hand, labour and all the effort it implies, and on the other, the work we create, the things we accomplish.

Before attempting to give a new definition of the word work, let's start by examining the meaning it has for us. We conducted, on social networks, a study among 1,523 subjects, irrespective of their social origin, gender or socio-professional category. The question we asked them was: if you had to define work in one word, what would it be?[1]

The most frequently cited were:

–money: 9.06%
–passion: 5.78%

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1. The survey was carried out in France, so these words are the English equivalents.

–slavery: 4.56%;
–obligation: 4.66%
–torture: 3.81%
–self-fulfilment: 2.82%.

Unsurprisingly, the perception of work as a way of making a living occupies first place. This makes sense, given that most of us, excepting the few with private means, need to work hard for more than 40 years in exchange for a remuneration–not always substantial–in order to provide for our needs. The other words that predominate illustrate two distinct views of work: on the one hand, a form of servitude, obligation, even torture; on the other, a passion and a source of fulfilment. Over and above this contradiction, one finding emerges very clearly: although work is not solely responsible for our miseries or our happiness, it does have a major impact on our well-being!

As we're obliged to work, and seeing as work has a major influence on our well-being, we need to ask ourselves how we can turn this obligation into an opportunity. Could we give another meaning to the word work and make it, in fact, the best way in which we can express our singularity? Could it become the way for us to get from who we are to who we want to become–for our own sake but also for the benefit of others?

The 'ikigai' way

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REDEFINING THE MEANING OF WORK

To be a man is to feel, when setting one's stone, that one is
contributing to the building of the world.
Antoine de Saint-Exupéry, aviator

Hannah Arendt is a philosopher who has probably reflected as deeply as anyone on the notion of work and all its various facets. In The Human Condition, she distinguishes between 'labour', 'work' and 'action'. According to her definitions, 'labour', from the Latin labor, is close to the notion of servitude evoked by Giuseppe Rensi in his book Contro il lavoro (Against labour). Here, the worker ('animal laborans' in Arendt's definition) is unfulfilled, their singularity is stifled, and the only thing that counts is the result obtained, which is often for someone else's benefit. 'Work', which relates to the Latin notion of opus (which is also at the root of the word 'oeuvre'), is a more noble undertaking. Here, the worker (homo faber) produces or creates something or contributes to a project that's intended to last and to carry the mark of the creator/contributor. It's associated with the notion of utility or consumption when the work relates to a need. For Arendt, 'action' is undoubtedly the highest form of work, characterizing the person whose 'work' produces an effect and enables the 'disclosure of the agent in speech and action'.[2] Arendt gives action a very political meaning, in the sense that politics was practised in Ancient Greece: it's about contributing, through one's actions, and in interaction with others, to the life of society.

This ties in with the distinction that the French philosopher Bernard Stiegler makes between 'work' and 'job' in his essay L'emploi est mort, vive le travail! (The job is dead, long live work!) According to him, 'a job is an activity remunerated by a salary, whatever the nature and quality of this activity. It is a mind-numbing activity that

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2. The title of the second chapter in Arendt's book The Human Condition.

diminishes people.' Conversely, 'work is an activity that contributes to my individuation, the construction of my singularity and that of others around me, with both colleagues and the wider community–as opposed to clients–benefiting from my talents.'

In the same vein, Bernard N. Schumacher sets out what is perhaps the clearest and most succinct definition of work: 'The true value of work is expressed through self-realization and the realization of one's individual talents through actions that contribute to the common good.'[3] According to this philosopher, work makes it possible for us to be self-fulfilled and contribute to society by drawing on our singularity.

It's this last notion of work that interests us here. Even if work is first and foremost a means to earn a living, we can turn it into an opportunity to assert our uniqueness and contribute to the goals of society. Be it for our own fulfilment or in the interests of the wider community. Even if society's goals are unclear, which seems to be the case today, we can still make work a means of expressing our singularity and contributing positively to the community.

Perhaps that's what well-being really comes down to: the alignment of who we are with what we do. Or, more accurately, the alignment of who we are with who we want to become, which is made possible by our involvement in society–in other words, our work. Hence the imperative need to discover our singularity, without which none of this is possible. If we lack this understanding, work will only ever be labor, or at best opus, never action.

This desire to express our singularity and find what we want to do with our lives is addressed by the Japanese concept of 'ikigai'. Although it emerged in Japan hundreds of years ago (between the 12th and 14th centuries), it was not until the 1970s that ikigai took on its present meaning. The term refers to a process of introspection that enables each of us to find meaning (gaï) in our lives (iki). In Okinawa, it's perceived as the 'reason to get up in the morning'.

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3. Taken from the Preface that Bernard N. Schumacher wrote for the French edition of Josef Pieper's book Le Loisir, fondement de la culture. (The English edition, Leisure: The Basis of Culture, lacks this preface.)

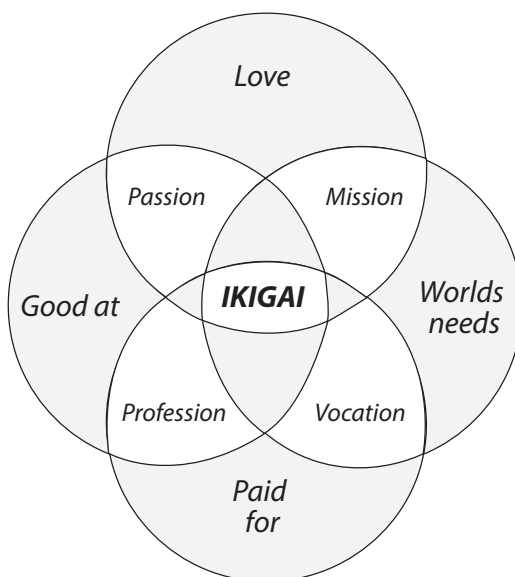Ikigai is found at the intersection of four dimensions, as illustrated below.

FIG. 1 – *The concept of ikigai*

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What you love doing

One must be excited about one's trade to excel.
Denis Diderot, writer

It's difficult to imagine being successful at work without loving what we do. Ideally, our work should fulfil our aspirations, ambitions, desires and dreams. We'll spend more than 40 years of our life working. In other words, waiting for retirement before beginning to be happy should not, for a second, be considered as a serious option. Yet, the vast majority of us are pursuing this option as the

only realistic one–or at least, the only one we've ever seen as being attainable.

This is, firstly, because many of us are so weighed down with so many pressures and responsibilities that we're simply looking for the most dependable way to make a living. It's not a question of asking ourselves whether or not we like what we do; we're simply trying to make ends meet at the end of the month.

Others might wish they could do what they love doing, but they don't consider themselves–or they genuinely aren't–talented enough. Personally, I love playing tennis, but I doubt that my skill level and physical abilities (not to mention my age, now) would allow me to make it my job. The issue, then, is knowing whether or not it's possible to combine what we like doing with what we're good at– and be able to make a living from it.

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What you're good at

The meaning of life is to find your gift.
The purpose of life is to give it away.
Pablo Picasso, painter

Of course, earning a living by making the most of our talents seems obvious. A person who's always had an aptitude for maths and economics will probably have no trouble taking up a career in finance and earning lots of money. Human Resources (HR) managers around the world, as well as all the so-called 'talent management' IT systems that HR managers use, rely on this notion of competence. They try to match our skills with those required by companies creating internal career-development plans or taking on new recruits.

Although this makes a lot of sense from an economic and organizational point of view, it doesn't always take individual aspirations into account. Just because I could do the job of an IT project manager, it doesn't necessarily mean that this is what I aspire to. I could do it, but

do I really want to? This is one of the reasons accountants and financial advisors, tired of spending their days dealing with numbers, even if they excel in their field, are taking up courses in sophrology in their spare time. They won't earn more money by becoming sophrologists, but they will be realizing their dreams. In any event, our aspirations and skills need to be meeting a need.

<div align="center">*</div>

What the world needs

<div align="center">
Don't ask what the world needs.
Ask yourself what makes you come alive and then go do that.
Because what the world needs is people who have come alive.
Howard Thurman, philosopher
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Information technology provides a perfect illustration of this. IT engineers often love what they do. Some people are very skilled in this area and thus have the good fortune of being able to combine what they love doing with what they're good at. The excellent news for them is that companies are currently looking for more IT engineers than schools and universities around the world can train. They thus find themselves in a very good position with regard to the concept of ikigai. However, what the world needs doesn't remain static; the job market can change radically.

I studied artificial intelligence in the 1990s and I both loved it and was highly skilled at it (or so it seemed to me, in view of my university results), but the world didn't need me! We were in the middle of what has been called the 'second winter' of artificial intelligence, and everyone, from my parents to my teachers, strongly advised me against continuing along that route. Given that doing what I love is a real obsession for me, I didn't listen to anyone and decided to pursue a PhD. I could, of course, have branched off onto a career path where, at the time, there was much more demand, such as systems and networks or software engineering. Twenty years later,

however, artificial intelligence is back in vogue and the world needs specialists in the field more than ever before. What the world needs is as unpredictable as it is fluctuating, and it's therefore inadvisable to make a career choice based on this criterion alone. The issue now is how we can earn a living.

<p style="text-align:center">*</p>

What you can be paid for

<p style="text-align:center">If you work for a living, why do you kill yourself working?
Tuco Benedicto, The Good, the Bad and the Ugly</p>

Yes, we may well love what we do, be good at it and be meeting a market need, but if we can't be paid for what we do, it's difficult to refer to it as work. After all, work still needs to be a way of making a living (at least for now–maybe that will change someday?)

In 1998, the 700 players in the French rugby championship earned on average barely more than the minimum wage at the time. Few of them were satisfied with the salary and, as a result, most had another job, keeping rugby as a hobby. Similarly, while the world definitely needs musicians, and we may be both good at music and love it, we can't say that music is our job if it's not our main source of income.

According to ikigai, our ideal job is to be found where what we like doing, what we know how to do, what the world needs and what we can be paid to do overlap! This ideal job draws on our singularity because it involves both our aspirations and our talents.

But how do we find our ideal job–work that will allow us to express our singularity, become the person we want to be and contribute to society?

The Bruce Springsteen way

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DISCOVERING YOUR IDEAL JOB

I was real good at music, and real bad at everything else.

Bruce Springsteen, musician

How can we make sure that what we do is in keeping with who we are? Although rarely if ever asked, this question has to be the most important one there is. We spend a lot of our life at work, but in the end we've no guarantee that what we do will make us happy unless we can be sure that it's in keeping with our inner self, our personality, our character, our natural behaviour–everything that makes us unique.

If we want to know this for certain, we simply have to ask ourselves the following question: if I was to win the jackpot in the lottery tonight, would I go back to work tomorrow morning? It's a pretty basic way to discover whether you really enjoy what you're doing, or whether you're going to work only to make a living. Isaac Getz, the author of Freedom, Inc., who popularized the concept of the 'freedom-based company' (also known as the 'liberated company'), estimates that only 11 per cent of people working for companies are truly dedicated to their jobs. Is there really no meaningful work available for the disengaged 89 per cent that would fulfil them? Or does this high percentage simply reflect the fact that at no point in our lives have we actually been helped to find our ideal job, our ikigai?

Of course, in our final years at school, career advisors are supposed to help us find our way–to somehow provide us with a miraculous revelation. But however well-intentioned they may be, it's unlikely, given that they're neither trained to discern a person's singularity nor really experts in the world of work, that they could really trigger such a revelation. If we don't discover what we want to do with our life while we're still at school, we'll fall back on the second option: getting the best grades we can so that we can pursue higher education. In other words, we take a course in engineering or business–the

more general the better–telling ourselves that it'll equip us to do anything, even if we still don't know what to do. But when we're capable of doing anything, we're unable to do anything specific, and we still don't know what we want to do.

This explains why, years later, even if we succeed–after much time and effort–in becoming a senior manager or a director, or in landing some other white-collar position valued by society, we finally decide to leave it all behind and switch to a manual job, even if it pays much less. We become cabinetmakers or bakers, or we choose a well-being career as a naturopath, yoga teacher or personal-development coach. We leave what American sociologist David Graeber calls the 'bullshit jobs', abandoning occupations that no longer make sense to us, where we feel we're spending our lives wasting them away.

There aren't many people who, like Bruce Springsteen, have a revelation of what they want to do with their lives while they are still in their teens. As the singer explains in his autobiography, Born to Run, he discovered this the evening of the 9th of September 1956, when he saw Elvis Presley perform for the first time on television in the Ed Sullivan Show. He devotes almost a whole chapter to what he felt in the moment, but these few words he writes about Elvis are particularly telling: 'A precursor of vast cultural change, a new kind of man, of modern human, blurring racial lines and gender lines and having…FUN!...FUN!... the real kind. The life-blessing, wall-destroying, heart-changing, mind-opening bliss of freer, more liberated existence. FUN... it is waiting for you, Mr and Mrs Everyday American, and guess what? It is your birthright.' The day after this inspiring television appearance, Springsteen, accompanied by his mother, rented his first guitar (they couldn't afford to buy one). And so it was, then, that he began to take his first steps towards his dream job and becoming a star.

It's all about discovering, as soon as possible, what's likely to make us happy, and then finding work that meets those criteria. But to do so, we must dare to ask ourselves the question.

Daring to ask the question

The great challenge of adulthood is holding on to your
idealism after you lose your innocence.
Bruce Springsteen, musician

In order to find our ideal job, we need to have the courage to
ask ourselves what sort of occupation(s) might fulfil us. Asking this
question can be scary for three reasons:

–we may have no idea what we want to do
–we may have an idea of what we want to do but no idea how to
  get there
–we may have an idea of what we want to do and how to do it but
  are afraid to take the plunge.

All three cases can be panic-inducing; we may feel as though we've
opened Pandora's box.

The first is very common. To help clarify the issue, we need
to return to the concept of ikigai and ask ourselves the following
questions:

–do I know what I'm good at?
–do I know what I love doing?
–do I know what the world needs?
–do I know what would fulfil the first three criteria and would also
  allow me to earn money?

Depending on the answers to these questions, we'll then need to
embark on a quest to discover either our singularity or what the world
of work has to offer. And maybe even both at the same time. This sort
of reflection can be done at any age. Although some people, like Bruce
Springsteen, are lucky enough to be able to answer these questions
at a young age, others don't discover the answers until much later
on in life. Whatever our age and responsibilities, we need to remind

ourselves that we don't have to tackle everything overnight; rather, it's about giving ourselves the chance to find work that will fulfil us.

When J. K. Rowling embarked on writing Harry Potter, her life was not an easy one: she was unemployed, recently divorced, had just lost her mother and was living with her sister. Nevertheless, she resumed writing a book about a young wizard that she had started a few years earlier when working as a research assistant for Amnesty International. Having been through a period of depression, she had recently returned to teaching, but she worked night and day to complete the novel. Several publishing houses rejected the book before it was finally accepted for publication by Bloomsbury Publishing. The rest is history.

The second situation is also quite common: we know what we want to do, but we don't have the slightest idea as to the path we need to take to get there. In such cases, we often give up on our dream rather than run the risk of being frustrated or living in uncertainty. To help us resurrect these dreams, we can ask ourselves this simple question: if I were to find Aladdin's magic lamp and all my dreams could come true, what would I like to do? Our answer may reveal that we're actually quite clear about what we want to do, but we haven't dared admit it to ourselves for fear of failure. How many people do we know who've become experts at burying their head in the sand? Such behaviour is well illustrated in Jean de La Fontaine's shortest fable, The Fox and the Grapes.

A certain Gascon Fox, a Norman one others say,
Famished, saw on a trellis, up high to his chagrin, Grapes, clearly ripe that day,
And all covered with purple skin.
The rogue would have had a meal for the gods,
But, having tried to reach them in vain,
'They're too green', he said, 'and just suitable for clods.'
Didn't he do better than to complain?

When we can't see a way to get to what we want, it can feel safer to tell ourselves that we don't really want it. We each need to

decide for ourselves whether it would be better to venture into the unknown and find a way or to stay on familiar ground and risk dying of boredom (or hunger, in the case of the fox).

The third situation, namely knowing what we want to do and how to get there but not daring to get started, is also common. One of my best friends comes from a family where all the men work in the business world. So naturally, when he turned 18, the issue of career choice wasn't even raised. Being more academic than his brothers, he wanted to try to get into Sciences Po (a top French research university specializing in the humanities and social sciences), but when he expressed his desire to his parents, his father told him that such studies didn't lead to anything and that he should go to business school. The discussion was decidedly closed. Standing up to one's family requires a courage that few have at that age. My friend simply wanted to follow his own desires, but making a different choice can easily be perceived as denial of the family legacy. Who among us has never, at some point in our lives or another, been faced with such a situation? What's even more ironic–and sad–is that years later, this same friend overheard his father saying that he'd given his children complete freedom of choice. Which goes to show that we may need to fight for our choices and that history tends to get rewritten over the years.

Sometimes, it can take a life-shattering event for us to finally dare take the plunge. The example of the French actor and comedian François-Xavier Demaison is a good example. While studying law, Demaison enrolled in the classe libre (free class) of the Cours Florent to satisfy his passion for theatre.[4] He eventually abandoned his acting ambitions and became an international tax specialist. In 2001, he was sent on a business trip to one of the company's headquarters in New York, where from his Manhattan office, he watched, helpless, the 9/11 attacks. This terrible event brought home to him just how tenuous, and sometimes short, life is. This realization motivated him to revive his passion and pursue his dream. In December 2002, he presented his first show to 800 guests at a showcase performance at the Théâtre du Gymnase in Paris, where

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4. Cours Florent is a prestigious private drama school in Paris.

he was spotted by the actor Samuel Le Bihan. That's when his dream began to take form, and that's how he came to be doing his ideal job.

Although it is, of course, essential to ask ourselves questions about our ideal job, we can really only discover the answer by taking the plunge. Until we've tried what we believe is our ideal job, it's difficult to have a clear idea of the nature of it.

<p align="center">*</p>

Trying out rather than planning

<p align="center">I think that your entire life is a process of sorting out
some of those early messages that you got.
Bruce Springsteen, musician</p>

While life might be much easier if we knew at the beginning what it held in store for us and which paths we would need to take, it would probably be much less interesting. None of us like being told the ending of a film before we go and see it at the cinema, do we? There is really only one way forward: try it and see!

The Marshmallow Challenge has shed some interesting light on this subject. Peter Skillman launched this design contest, which asks groups of four to build, using lengths of spaghetti, the highest structure possible that can support a marshmallow. The teams are given only 20 lengths of spaghetti, adhesive tape and string. It sounds simple, but it's actually very complicated. A TED talk describes the challenge in detail.[5] The results are telling: those who do best are not engineers, students, business school directors or lawyers, but nursery school children! They produce not only the tallest structures, but also those with the most interesting shapes.

Anyone who has pursued higher education has been conditioned by the idea that working well means developing a perfect plan that

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5. https://www.ted.com/talks/tom_wujec_build_a_tower#t-21991 (accessed April 2019).

functions immediately. So, these participants in the challenge spend almost all the allocated time devising a plan. When the time comes to execute the plan, they rush it, try to balance the marshmallow on top of the structure ... and the whole thing often collapses. In practice, things rarely turn out just as they were planned in theory.

Young children, however, have not yet been conditioned to develop the perfect plan–or any plan at all, for that matter. Their 'plan' for building the highest structure topped with a marshmallow simply consists in having a go. At the start, they place the marshmallow on the beginnings of the structure and then try to make it bigger. They attempt this again and again before they get it right, but they end up with the highest spaghetti structure able to support a marshmallow on top of it.

This design challenge demonstrates an interesting fact: the important thing is to 'start from the end', keeping the aim constantly in mind and trying to find the best way to achieve it by testing out lots of things, allowing ourselves as much freedom as possible. This requires an ability to do something very difficult: we have to get past our preconceptions! We disregard many routes, thinking they won't work for us, and we set great store by others, convinced that they'll fulfil us. We're often mistaken.

When I was young, I wanted four things:

–to feel free
–to brighten people's lives
–to be creative
–to be part of a team

I started playing the piano when I was 12 years old, and I very soon began to compose. When I was 14, the father of a school friend took a group of us to a concert in aid of Amnesty International in Bercy, Paris. It was the 4th of September 1988 and that concert literally changed my life. There before me were Sting, Peter Gabriel, Bruce Springsteen, Youssou N'Dour, Tracy Chapman and Michel Jonasz. I had goose bumps throughout the entire concert; I was ecstatic. My life had changed; it no longer had the same flavour, the same colour.

It was magical, and I was totally convinced that I, too, wanted to become a musician and transport people to another world for a few hours in that same way.

From that moment on, composing music was my favourite occupation. I could see myself touring France in a bus to perform concerts with my band, and so I spent most of my time locked in my room with my keyboard, composing music. Meanwhile, I began performing with a band in concert venues around Paris, first as a keyboard player and then, from the age of 25, as a singer-songwriter. For years, I did the rounds of record companies, hoping to get signed. Yet today, I'm the managing director of a software company working in the field of human resources.

Yes, that's rather different, and no, I was never signed by a record company and I haven't become a professional musician. Life had other plans. And yet, strangely, I believe I've realized my dream. As an entrepreneur, I'm relatively free to do what I like, with no boss above me to dictate my daily life. My company's mission is to help every working person experience self-fulfilment, and I believe that means we're significantly brightening people's lives. Being in charge of product design, I'm constantly required to create, like I'd wished for. And I work in a network of several hundred people, spread over more than 15 countries. Certainly, my daily life is not at all the one I'd imagined, but it allows me, against all expectations, to fully express my singularity and to do something that makes me feel totally fulfilled. After all these years, I've learned this simple lesson: we don't know the nature of a job and the effect it will have on us until we've tried it.

Trying out rather than planning, and exploring the unexpected avenues that life presents us with, while remaining as open-minded as possible, seems to me to be the best pathway to self-fulfilment. The question is, how do we find that sometimes-elusive moment where we know we're in the right place at the right time in our life?

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The ideal job doesn't feel like work

I have to write and play. If I became an electrician tomorrow,
I'd still come home at night and write songs.
Bruce Springsteen, musician

Of course, when we read this quote from Springsteen, we don't read it in terms of a definition of work; rather, we think he's just very lucky. The philosopher Confucius seems to agree entirely when he says, 'Choose a job you love, and you will never have to work a day in your life.'

One thing seems certain: a good job shouldn't feel like work! At least, not in the way that most of us have defined it. Again, artists provide a good example of this alternative way of approaching work. When musicians are on stage playing for over three hours, technically, they're working. In other words, they're playing their music in exchange for a fee. Sometimes this is substantial, yet we're aware that they're not just in it for the money. They generously give of their time and pour their heart and soul into it because they love it. When Madonna, the Rolling Stones or U2, who've been hugely successful for decades, go on tour, they don't do it for money–all of them are already multimillionaires–they do it because it makes them happy!

Of course, using the example of artists to define the ideal job may seem inappropriate for the thousands, if not millions, of people who know the feeling of dread that descends on Sunday evening at the thought of having to go back to work the next morning. We imagine it's easier for these stars, because they know very clearly–and sometimes from a very young age–what they want to do, and that's not the case for most of us. In addition, these artists are the ones who've made it; life is much less rosy for those who have been less successful. Nevertheless, I can say, having had the chance to meet a few, that most (true) artists are happy in their work, regardless of how successful they are, and wouldn't trade their life for a job

that pays more money.[6] And as Bruce Springsteen has said: 'Success makes life easier. It doesn't make living easier'.

Fortunately for us, it's not only artists who can enjoy this enviable experience. It all starts, as we've seen, by knowing what it is we love doing, what makes us happy, and then trying to find the best way to do it. Many indicators can show us that we're on the right track, or even that we've found the 'sweet spot'–our niche. The well-known Sunday-evening dread would certainly seem to indicate the opposite.

Gary Vaynerchuk,[7] who loves his work, explains in one of his podcasts that he hates Fridays![8] He clearly makes the point that if we're spending the week waiting for it to end, we need to be asking ourselves some serious questions about our career choices! There could even be an argument for changing the well-known 'Thank God it's Friday' to 'Thank God it's Monday', as an expression of the fact that we can't wait to get back to our work adventure. If this is true for us, we can be sure we're heading in the right direction.

When we feel a harmonious continuity between 8:59 and 9:01am, when we don't feel 'schizophrenic' but rather that we're able to be ourselves all the time, we can reasonably tell ourselves that we're on the right track–our track! Beyond what we might say or think about our situation, the answer often lies in a sense, a gut feeling, we have. When we've found the right work, when we love what we're doing, we feel a sort of inner resonance, a 'warmth' spreading in our chests, a kind of spark, as though the alignment of who we are with what we're doing has lit a fire that we can feel burning inside us.

French actor Jean Rochefort knew better than anyone how to get into character the moment the 'action' switch went from 'off' to 'on' and the light appeared. You could see this unique, almost imperceptible, little grin appear on his face and you would understand that he

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6. By 'true' here, I mean those who are more interested in their art than in the money they can earn from it.

7. Gary Vaynerchuck is an American serial entrepreneur and New York Times bestselling author of four books. He is one of the pioneers of digital marketing and social networks.

8. https://soundcloud.com/garyvee/a-rant-i-hate-friday (accessed April 2019).

was satisfied, content–happy, even. It's that sort of grin that we need to discover in ourselves–that moment when the 'serenity switch' inside of us changes position and the light goes on.

In addition to illustrating the positive aspects of work, however, artists also show how what was once a passion can become routine and reduced simply to a means of earning a living. Indeed, some celebrities have made no secret of the fact that they continue to work simply for the money–particularly those whose lifestyles wildly exceed their income. This goes to show that the 'job that doesn't feel like work' at a particular time in our lives can quickly turn into a bread-and-butter job in a different context.

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Today's perfect job is not your ideal job forever

It's just being honest with the audience and yourself.
You can't conform to the formula of always giving the audience what it wants, or you're killing yourself and you're killing the audience.
Bruce Springsteen, musician

It would be easy to think that this wonderful feeling of being in the right place is permanent–it was difficult enough to get there, after all–but unfortunately, that's rarely the case! We may be lucky enough to love what we do for a while but find our enthusiasm waning at some point. It's like a romantic relationship: for it to last, a couple needs to be checking regularly that their life goals, personalities and desires remain aligned. Otherwise, the passion of the early days can quickly become a distant memory. The same is true with work. We're happy when who we are is perfectly aligned with what we do. But this alignment is not immutable; rather, it needs to be constantly activated.

In Shop Class as Soulcraft, Matthew B. Crawford tells how he went from working as a brilliant academic in a Washington think tank to creating a motorcycle repair shop.[9] In particular, he explains

9. Matthew B. Crawford, Shop Class as Soulcraft: An Inquiry into the Value of Work, New York, Penguin Press c.2010.

that he has the impression that he needs to think much more in this new job than when he was making a series of complex micro-decisions whose impact he never really understood. And so he finds his new work much more rewarding and fulfilling.

On a different note, Pauline, a young woman of 30, decided to leave her secure but humdrum job to make a series of documentaries following the experiences of people who've left everything to embark on a new life. In the first episode of the series,[10] Pauline immediately sets the scene by asking two questions: what is work? and what work is worth giving our lives to? She begins providing an answer by introducing Grégor, a former video editor, who's now working in permaculture. He explains: 'I'm exploring new ways we can live in harmony and put people and nature at the centre of our decisions. I'm developing a different way of relating to others that's respectful and considerate.' No one can tell how long this will fulfil him before he feels the call to new pastures. What matters is that at each stage of our lives, we remain at one with what we're doing.

Such changes of direction are becoming more and more common: architects are becoming yoga teachers, accountants are buying and running restaurants, doctors are giving up their practices to engage in humanitarian work. We often make these kinds of career changes following a specific event–anything from a simple realization to a major shock (a break-up or an accident, for example)–that causes us to think differently about the meaning we're giving to our life.

It's the well-known syndrome of the 'révolte des premiers de la classe' (the revolt of the straight-A students) that Jean-Laurent Cassely describes in his eponymous book, in which he explains why executives and other white-collar workers are leaving the ready-made career paths they were supposedly destined for and switching to more manual trades, more tangible jobs that they find more meaningful. They subsequently experience a kind of social 'downgrading' because society favours intellectual professions governed by abstraction. To

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10. To watch this documentary, in French only: https://www.youtube.com/watch?v=u_tcrhBGsvo (accessed April 2019).

put it another way, the less practical and easily explainable to a five-year-old our job is, the more terrific everyone is likely to find it!

It was to help those looking for meaning and wanting to change careers that two young French women created the company Switch Collective. They've developed an entire programme that encourages those who choose to participate to reassess themselves, find out what makes them happy or unhappy, and ask themselves the right questions in order to make a career choice that will fulfil them. Given the unfailing enthusiasm of course participants, grouped within promotions, it seems that switching careers is no longer an epiphenomenon but an essential rite of passage of working life.

It's essential that we stop thinking about work in terms of career but that we see it instead as a succession of experiences that, at a given moment, best fit our state of mind, our expectations, our skills, our values and our desires, all of which can evolve over time. Sometimes, we may be able to advance within the same company; at other times, we'll need to change projects, change companies or even change our occupation altogether.

So, our ideal job is not something that's fixed once and for all, but rather, something that we need to learn to mould and shape throughout our lives. It's not a place, but a state at the intersection of the four dimensions of our ikigai, where we feel good, in harmony with who we are, with our singularity–and we need to learn to move towards it.

The Aaron Sorkin way

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MOVING TOWARDS YOUR IDEAL JOB

*I don't know if we each have a destiny, or if we're all just floatin' around
accidental-like on a breeze. But I, I think maybe it's both.*

Forrest Gump, 'philosopher'

As the excellent screenwriter Aaron Sorkin, author of The Social
Network, Moneyball and The West Wing, explains in a masterclass,
all good stories begin with an objective.[11] This is the starting point,
from which a 'wire' will be drawn towards the goal and upon which
the hero will try to 'tightrope walk' for the film's duration. For the
story to captivate us–for us to become truly involved in it–we need
to be in doubt as to whether the hero will reach this goal. The writer
therefore needs to strew the hero's course with as many obstacles as
possible. The tension of a film resides in the relationship between the
goal and the obstacles. The more noble the objective, the greater the
obstacles will be.

In the Odyssey, Odysseus wants to return home, but encounters
terrible difficulties in getting there. The same is true for other heroes,
who may have to travel through space to return to Earth (The
Martian, Gravity, Apollo 13), find the 'raft' that will enable them
to reach civilization (Cast Away, Lost), or even travel through time
(12 Monkeys, Back to the Future, Groundhog Day, The Visitors).
And then, of course, there are the many heroes whose small job
it is to save the world (2012, War of the Worlds, Godzilla)! Our
mission, although more modest, is no less important, because it
involves discovering the best route to lead us to our ideal job–
the work that's at the intersection of our desires, talents, what the
world needs and what will enable us to earn a living. And, as most
of us are only too well aware, it's not that simple. It seems there are

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11. To access this masterclass (fee payable): https://www.masterclass.com/
classes/aaron-sorkin-teaches-screenwriting (accessed April 2019).

always plenty of obstacles in our way when we're trying to reach our goals.

When we're starting a business or a major project, we lack manpower, time, money, customers. What we don't lack, on the other hand, are competitors. All the same, this is a good sign, because it means that there's a market for our project. Obstacles are there in plenty when we're looking for a job, too. Firstly, we're not the only candidates interested in it–or, if we are, we should have serious doubts about the job in question. When we're job-hunting while in work, it's not always easy to find the time needed to go for job interviews. We may also discover that these job opportunities pay less than we'd hoped. In short, we may sometimes feel, rightly or wrongly, that everything is stacked against us and our goals.

The only way we'll manage to overcome these 'ordeals' is by learning to keep our eyes firmly fixed on the goal at all times and to be flexible in how we address these problems.

<p style="text-align:center">*</p>

Differentiating between the route and the destination

All that is gold does not glitter / Not all those who wander are lost…
Bilbo Baggins, hobbit, The Fellowship of the Ring

Knowing our destination–in this case our ideal job–is one thing, finding the route that'll take us there is quite another. We often confuse the two, yet there's a big difference between them. If you're going to a friend's house for dinner and your GPS tells you that the route you were planning to take is not the right one, you may change your route, but you won't decide to go and have dinner with someone else instead. Incidentally, don't we just love to challenge our GPS when it sends us on a different route from the one we usually take? 'That's rubbish! That's not the way! Stupid GPS!', we exclaim, before stubbornly going our own way, only to realize a few minutes later that the route proposed by the GPS was to avoid an accident or roadworks.

The same is true when it comes to moving towards our ideal job. At the age of 33, I changed direction completely when I gave up my dream of becoming a professional musician to work as a chief product officer. That said, I don't think I've changed my 'destination'. I still want to feel free, brighten people's lives, be creative and work in a team. Although I don't do it by giving concerts to thousands like I'd imagined, I believe I'm helping people find fulfilment in their work. The route has changed, but not the goal! I don't know if the world has its own GPS, but life certainly sent me signals that encouraged me to make this change. Just as the doors of the record companies were closing–I was told that I was in the 10 per cent they enjoyed listening to the most but not in the 5 per cent they were going to sign–the opportunity to develop software to help companies better manage their talents came to me out of nowhere. One hand was closing, but another was being extended to me.

In the software industry, this sort of turnaround is called a 'pivot'. To pivot means to divert the intended use of a feature or product so that it meets another need, one clearly more in line with the needs of potential clients. The American TV series Silicon Valley provides a good illustration of the vacillations that accompany a pivot. Richard Hendriks, the founder and CEO of Pied Piper, the startup whose adventures we follow throughout the series, constantly asks himself the same question: am I betraying the 'essence' of my project, its original objective, and turning my back on my goal, or am I simply changing direction in order to find the best way to reach this goal?

It's always tricky making a decision in these kinds of situations because there's no magic formula. Gaggan Anand provides a good example of the sort of adaptability needed to change direction without losing sight of the destination. He's the archetypal self-made man who has built his destiny by force of will and by means of his singularity. The restaurant that has borne his name since 2015 rose to the top of the list of Asia's 50 best restaurants in 2018 and took

second place in 2019.[12] Gaggan was born in extreme poverty in Calcutta, India. He's always been proud of his culture, of his country and, above all, of the food eaten there–the spices, the flavours and the richness of authentic Indian cuisine. He loves the home-cooked dishes he grew up eating, but has always regretted that India, despite its size, lacks internationally recognized chefs. The reason for this, he believes, is that the world knows India–from a culinary point of view–only for its curries and its naan bread, while these two famous national dishes actually come from Great Britain and Persia, respectively. So, he decided he would make it his mission to introduce Indian cuisine to the world! Following a long journey full of twists and turns, obstacles and dramas, he was on the verge of achieving his goal with a restaurant in Bangkok. Unfortunately, the restaurant's opening had to be delayed due to riots that had taken place there a few days earlier. Devastated, he decided to turn this tragedy into an opportunity and managed to find the resources to leave for an internship at elBulli, a Spanish restaurant run by chef Ferran Adrià and known for its molecular cuisine. Notably, elBulli has made 'spherical olives', which have become one of its specialties, by transforming one of the key ingredients of Spanish cuisine. This is where Gaggan acquired the legendary technical expertise that he has used to adapt Indian classics.

His restaurant did eventually open but, given all the debt he'd accumulated, he began by serving what guests expected: naan, curry and other classics. Gradually, he then began to adapt a dish here, a dessert there, and without his growing clientele noticing, he withdrew the classics from the menu one by one until he was serving only original dishes that displayed the variety of Indian cuisine. His 'yogurt explosion', has contributed–along with other gastronomic adaptations–to making him famous. Fully embracing his singularity, he's even announced that he's going to close his restaurant in 2020 to take a break and reinvent himself–proof that,

12. To view the ranking: https://www.theworlds50best.com/asia/en/asias-50-best-restaurants.html (accessed April 2019).

in defiance of all economic logic, he's truly committed to following his instinct.

As Gaggan says, in a fine phrase reminiscent of Henry Ford or Steve Jobs: 'It's about having the confidence to do what you want to do [rather than] what a guest wants you to do'. Indeed, we can see that he wouldn't have made a name for himself by simply opening another Indian restaurant in Bangkok. But he has proved, with all the detours his journey has taken, that it's possible to reach one's goal by following what appears to be a very winding route. Who knows; perhaps, despite everything, it might have been the shortest route.

To move towards our ideal job requires perseverance, conviction, even faith, because the obstacles can be numerous and will sometimes seem insurmountable. It's therefore essential that we learn how to interpret them.

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Knowing how to interpret obstacles

If you hit a wrong note, it's the next note that you play
that determines if it's good or bad.
Miles Davis, trumpeter

Agatha Christie allegedly said that "the secret of getting ahead is getting started". But how do we know in what direction to start moving when we don't have the slightest idea which route to take to reach our ideal job? We need to learn to take the first step: it may be the costliest, but when we take it, the answers will begin to emerge– even though they may look like obstacles. In fact, the obstacles we encounter on the way will speak to us, our journey and our destination. There are two types: 'test obstacles' and 'signpost obstacles'.

When we set ourselves a goal, it seems that life likes to test us to see whether our motivation is really genuine. Let's take the example of a holiday. You've finally chosen a destination, and you're delighted about it. However, you start talking to your friends and learn that

you'll need to be vaccinated against yellow fever and take tablets against malaria. As you dislike both vaccinations and taking medication, you're about to find out how intent you really are on taking this trip! If you really have your heart set on going, you'll not let this put you off. If not, this so-called obstacle will put an end to your holiday plans. Basically, such 'test obstacles' don't prevent us from achieving our goal; rather, they test our will and assess the intensity of our desire.

Let's continue with another holiday example. You've chosen a destination and have begun to prepare for your holiday when you learn that your friend can no longer make it. You say to yourself: it's only a test obstacle; I'm not going to give up my dream holiday for that because I really want to go. Unfortunately, the next day, you hear on the radio that a hurricane is heading for the city where you're due to land. Again, you say to yourself: it's only a test obstacle; I'm not going to give up my dream holiday for that because I really want to go. But when, two days later, you learn–on the radio again–that the embassy is strongly advising against visiting the country following a coup d'état, are you still going to say to yourself: it's only a test obstacle; I'm not going to give up my dream holiday for that because I really want to go?

When reading these few lines, you can sense a certain doggedness that's probably misplaced. There comes a point when, without becoming superstitious, you need to face the facts: life is trying to tell you something. Instead of persisting, it's time to see in this succession of obstacles a sign that it would be better to change course. Once again, it's not about changing your desires. If you were dreaming of swimming in the sea, you don't have to go to the mountains. There will be other places in the world where you can swim in the sea without this combination of adverse circumstances hindering your holiday.

The above example is deliberately trivial. Interpreting signs can be much more difficult in real-life situations, especially when a project is important to us. While I was running from one record company to another in the hope of getting signed, I was supporting myself by teaching at the university. I even applied three times to become a lecturer, thinking that this job would leave me enough time for my music. I was rejected three times. The first time, the members of the interviewing panel politely

told me that my thesis was more like a management thesis and that my application to a computer science laboratory therefore seemed somewhat incongruous. The problem was that when I decided to apply for a position in a management laboratory, I was told that because I had a computer science degree, that was not possible. On my second attempt, they were a little more direct and told me I was not suitable for the job. The third time, they didn't even want to consider my application. This was a 'signpost obstacle'. It was as though circumstances were whispering in my ear that it would better for me to change direction.

At around the same time, in 2001, I started my first business. By the time the university had stopped paying me what I needed to support myself, my small business had started to do so. Of course, dividing my time between work and my music, I wasn't earning a huge amount. Some months, I had the bailiffs knocking at my door, and in fact I wasn't far from having them seize everything inside my apartment, which was not a lot, but still. Some weeks, I had to ask my parents for a handout just to do some shopping.

It was not the most glorious period of my life. My parents, like almost everyone else around me at that time, would regularly ask me: 'Don't you want to look for a real job, with all the degrees you have?' To which I inevitably answered: 'No, I don't want to give up on my dreams!' I knew that I couldn't go on receiving these little handouts forever–it was embarrassing enough already, given that I was over 30 years old–but giving up on my dream job was unthinkable. In hindsight, I believe that all these problems were 'test obstacles', to prove my motivation.

Far from being pointless, obstacles can serve as guides and indicate the way forward to us. They show us that we need to stay on course (test obstacles) or change direction (signpost obstacles). Of course, the way in which we interpret them is far from scientific. On the contrary, it's quite subjective, and a situation can lend itself to numerous readings. Nevertheless, how they resonate with us and what they evoke in us is very real! And sometimes they whisper things that we're unable to put into words, things we've not allowed ourselves to consider. Knowing how to interpret obstacles

is ultimately about learning to listen to ourselves, which, for many of us, is one of the hardest things to do.

All of this aside, being in tune with ourselves doesn't prevent us from sometimes trying to 'force the hand of destiny'–doing everything possible to achieve our goal, that is, while respecting our values and our singularity, of course. In other words, we can create our own luck.

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Knowing how to create your own luck

Luck is what happens when preparation meets opportunity.
Jack White, musician

The dream has to be earned! Moving towards your ideal job means trying to find a place where you think you can be both happy and useful. For many of us, that seems like a dream. But we need to find out how to do more than just dream.

I was having lunch with a (potential) future entrepreneur and she was explaining her project to me. It matched her skills and aspirations, met a need faced by most parents, and it certainly looked as though it would be successful enough to provide her with a living. In short, it fulfilled all the criteria of ikigai. At the same time, with every other sentence she uttered, she seemed to be almost taking pleasure in telling me about all the obstacles, hindrances and difficulties she was anticipating–and she hadn't even started her business yet. Even if not all obstacles are destined to trip us up, it's a mistake to fall in love with them! If we take lessons to learn how to ride a motorbike, one of the first things the instructor will tell us is that the bike will head for where our attention is directed–a truth that we're soon able to confirm for ourselves! It's truly amazing to realize how nearly all of us have the unfortunate tendency of keeping our eyes on the obstacle rather than looking up to see where we want to go.

It's the same with our projects. Difficulties exist, of course, but we can't look to the problems to give us the energy we need to move towards our goal, quite the opposite. Like any author, I've experienced my share of joys and discouragements while writing this book. The latter always come when I start focussing on the difficulties I'm facing (the ordering of chapters, an idea I'm having trouble expressing satisfactorily, a reference I can't find, etc.) rather than when I remind myself of the impact that a book can have on our lives, and the wonderful responsibility that comes with being an author. Our ability to overcome obstacles depends, to a large extent, on our ability to keep our goal in mind, protecting it from the storms of life.

Moreover, paying too much attention to the potential difficulties that may arise in the course of implementing a project, solution or initiative kills not only any form of creativity but also any attempt to take risks. Philippe Gabilliet, a professor at ESCP (a European business school in Paris), explains in a very interesting video that luck is, in fact, a skill that we need to learn to develop.[13] The key idea here is that luck–the fact that good things just 'happen' to us–results from a way of seeing the world. If we get up in the morning persuaded that it's going to be a good day, we're naturally more inclined to see what might give us pleasure. It's as though our eyes are focused to see the good things. On the other hand, if we get up telling ourselves that it's the start of a gloomy day, we'll be more easily drawn to focus on things that tend to prove us right.

This theory relates directly to the idea that reality is a malleable matter. From the philosopher Ludwig Wittgenstein to the thirty-something New Yorkers in How I Met Your Mother, people have disagreed on whether the image below represents a rabbit or a duck. (And then the four have to decide which is the cutest of the two–the most conflictual issue of the series.)

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13. Philippe Gabilliet, 'How to create your own luck': https://www.youtube.com/watch?v=PR7gmV75jYE (accessed April 2019).
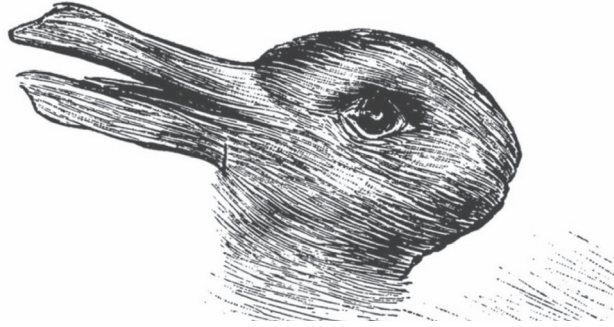
F<small>IG</small>. 2 – Rabbit or duck?

There are always different ways of seeing the same situation. One person will see an opportunity where another sees a problem. As Winston Churchill allegedly said: 'A pessimist sees difficulty in every opportunity; an optimist sees the opportunity in every difficulty'. The ability to turn each situation into an opportunity is definitely a skill worth developing.

Identifying opportunities is one thing, knowing how to create them is another! If we want to land our ideal job one day, we need to give destiny a helping hand and try to change the course of events–what some more commonly call taking risks. This reminds me of the story of Jean-Claude Van Damme giving a martial-arts demonstration outside a restaurant in front of an influential producer (Menahem Golan in his heyday). And of Christian Audigier distributing his Ed Hardy brand t-shirts to celebrities walking past his shop, hoping that someday one of them would wear one. Madonna did, and it kickstarted Audigier's career.

Apparently, both Richard Branson and Elon Musk's mothers used to repeatedly tell their young sons that to get the results they wanted, they would need to work hard and take risks. They certainly don't seem to have done too badly with that advice! Admittedly, these are just a few examples, but as the lottery motto says, 'You can't win if you don't play'.

It seems to be the done thing at dinner parties to be pessimistic and cynical and to denigrate the 'naive' people who are trying to

do the so-called 'impossible'. By wallowing in negativity, we end up stuck there, and ikigai risks becoming just a vague Japanese notion, certainly not our reality. It's also interesting to see how a country's language can affect its culture. French Canadians translate 'to take a risk' as 'prendre sa chance'–literally 'to take one's luck'–which is immediately more encouraging.

It's up to each of us to choose sides. Will we join the 'naive', the 'otherworldly', the 'utopian', or will we join the side of grumblers and sceptics? Whatever we decide, our choices are entirely our own. Matt Damon and Ben Affleck made theirs when they wrote the screenplay for Good Will Hunting. The two friends experienced many setbacks before, finally, Gus Van Sant agreed to take the reins of the film that would launch their careers. In fact, on more than one occasion, they were almost thrown off their own project, because studios like Castle Rock wanted Leonardo DiCaprio and Brad Pitt in the roles rather than these two unknowns. The rest is history: an Oscar for Best Screenplay and Robin Williams's only Oscar (for Best Supporting Actor) in 1998. Good Will Hunting, not content to be merely an umpteenth depiction of well-provoked luck, is also a beautiful film that has a lot to say about following your dreams, which notably requires knowing how to overcome your fears.

The Good Will Hunting way

OVERCOMING YOUR FEARS

You will have bad times, but they will always wake you up
to the stuff you weren't paying attention to.
Sean Maguire, psychotherapist, Good Will Hunting

It's difficult to imagine moving towards our ideal job if our lives are shaped by fear, because when we can't control it, or at least live with it, fear can literally paralyze us. This is one of the central themes of

Good Will Hunting. The film is about a maths genius (Will Hunting, played by Matt Damon) who attracts the attention of an eminent professor at MIT. Born in a working-class district of Boston, Will chose to drop out of school to hang out with his band of buddies (including Ben and Casey Affleck) rather than put his talents to good use–for himself and others–and accept the bright future that could be his. This denial results from many fears, which the film gradually brings to light:

–the fear of success and being too different from his friends
–the fear of leaving Boston and an environment that he's known all his life
–the fear of being disappointed by the promise of a future that he dare not even begin to imagine;
–the fear of not being able to live up to the expectations that the MIT professor (Stellan Skarsgård) has of him
–the fear of loving for fear of getting hurt
–and, above all, the fear of abandonment (he's already been abandoned by his parents).

The film shows the journey this genius takes in grappling with his fears, which are preventing him from living life to the full–or more accurately, from accessing the full life that could be his if only he'd let go of the much more comfortable monochrome version he's currently living.

Even if we're not maths geniuses, we're all familiar with one or more of these fears. Indeed, we were virtually taught them at school, where we were afraid of having to resit exams because our grades weren't good enough, afraid we'd get found out when we hadn't done our homework and afraid of looking like an idiot in front of our classmates. We were also afraid of disappointing our parents (or of getting told off) when we got our school report, afraid of not knowing which subjects to study, then afraid of not having the right qualifications and/or being in the right job ....

So how then, do we overcome our fears?

Understanding where your fears come from

When you're scared, you have to face your fear.
Otherwise it'll eat you alive.
Katherine Pancol, novelist

Not all our fears are bad. Let's not forget that fear is directly linked to the survival instinct: it's the fear of dying that protects us from certain dangerous activities, that sometimes gives us a shiver down the spine as a forewarning of a problem.

The fears we need to reject are those that inhibit us and prevent us moving forward in our lives, the fears that function as 'blockers' or 'hindrances'. Clearly, we're not all afraid of the same things. Our childhood, life experiences, the social class into which we were born, the country in which we grew up and the education we received all exert an influence on us in different ways and can create a whole range of fears within us.

In addition, a lot of our fears appear to be inherited from our parents and other family members, inasmuch as they have no logical reason for being in our life. I know many people who are really phobic about not having enough–whether that be money, food or love–even though they've never lacked anything. When we dig a little deeper, we may discover that their parents were very hard up before having children and passed this anxiety on to them, either through the way in which they brought them up or, less consciously, by instilling their anxieties into them over time. At the risk of generalizing, a family that has experienced misfortune in business may have a fear of taking initiative and thus continually discourage others, wanting to protect them from the same fate.

To overcome our fears and give ourselves the chance to be free of their effects, we'll often need to deconstruct them to get to the root of the issue and understand why they exist. Our challenge is to find some level of freedom when fear looms. Whenever you feel afraid,

ask yourself: why am I afraid of this?[14] For example, if you want to go and talk to someone, in a work or personal context, but feel a paralyzing fear, ask yourself: 'why am I afraid to go and talk to that person? Various answers may emerge: I'm afraid of disturbing them; I'm afraid of being intrusive; I'm afraid they'll reject me, etc. If you ponder the question honestly, you'll probably discover that one fear resonates more with you than others. If, for example, the last answer is the one that rings most true, then ask yourself: why am I afraid this person will reject me? Again, let the different answers rise to the surface of your consciousness.

Gradually, as you continue to ask yourself questions, you'll uncover the fear that's at the root of all the others. In this case, the root fear may be: I'm afraid I'm not interesting. And that's exactly where, in fact, it becomes interesting, because sometimes–often, even–you'll realize that the fear you feel is completely unrelated to your current situa-tion. A Nobel Prize winner or a well-known business leader may feel that they're not interesting, while everyone actually loves them. This may simply be because as children, they went somewhat unnoticed, immersed in their homework, not fitting in well with others, etc. (This is, of course, a very meagre psychological summary, but the idea is to illustrate a line of thinking, not to take you through the whole process.)

One of the key ways in which we can overcome our fears is to find their source and try to 'disempower' them by becoming aware of the discrepancy that exists between their underlying causes and the situation we're facing today. Who we are, what we do, the image of ourselves that others reflect back to us: all these things are constantly changing. It's therefore not only a pity but also pointless to cling on to obsolete 'knowledge' when reacting to present situations.

Far from being just an unfortunate necessity, facing our fears can actually help us to defuse a situation. We can call it overcoming fear by imagining the worst.

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14. Once again, we're not talking here about the sort of life-saving, instinc-tive fears that help us avoid life-threatening danger.

Overcoming fear by imagining the worst

To conquer fear, you must become fear.
Ra's al Ghul, mentor, Batman Begins

Imagining the worst is a very effective way to free yourself from your fears! In fact, when we understand that the fear that haunts us like a dark shadow is rooted in our expectation of something terrible happening, we need to take this line of thinking to its extreme. If we allow ourselves to imagine the end of a nightmare scenario, we'll realize, most of the time, that the situation is really not so terrible after all–or, at least, it won't be fatal to us! This helps to diminish our fear of it; we can give it less importance and weaken its hold over us. In short, we can free ourselves from it.

Yes, there are some serious things we might be afraid of: dying, getting sick, losing a job when we're not in a situation that would allow us to bounce back easily or we have a family to support, losing a loved one, etc. I certainly don't want to disregard or minimize the pain and difficulty of such situations. Quite the opposite: I want to help us find ways to overcome our fears so that they have less influence over the life we want to lead. Let's keep in mind these helpful words from writer Stefan Sweig: 'Fear is dying a thousand times, it's worse than death'.

Philosophers, especially the stoics, have something to teach us here. The main focus of stoicism, of which Seneca was one of the key proponents, is to learn to accept what doesn't depend on us in order to give ourselves the best chance of being happy. As an illustration, take what Tiger Woods once said in an interview. On the eve of a big tournament, a journalist asked him the following question: 'Are you not afraid of the weather tomorrow, which is forecast to be catastrophic?' To which the golfer very calmly replied: 'I never worry about things I can't do anything about'. That's true, of course: the champion could work on his swing and prepare himself mentally and physically, but he couldn't do anything to change the weather. So,

worrying about that would've been totally pointless. However serious the situations we're fearful about may be, many of them are things we can do little, or nothing, about, so we may as well not focus all our attention on them.

In addition, many of the situations we fear are, in reality, not so very disturbing. My father raised me to fear administration, the police and authority in general. He has always been extremely punctual (the 'politeness of princes', you might say), afraid lest he be reproached, or even punished, for being late. He has always paid fines and taxes immediately and in full, never ventured to drive without having his license on him[15] and has hardly ever missed a day's work, except in a case of real emergency. In short, he's never rocked the boat. Like any self-respecting child, I faced two choices: follow in my parents' footsteps or build my life in opposition to their advice. In hindsight, I think I managed a clever mix of the two, for the most part listening to my mother and disagreeing with my father. In fact, I went in the opposite direction to him: I used to play truant from school as often as I could, loved to drive without having my papers on me, wouldn't wear a watch (I regularly arrived late) or pay fines (sometimes not until I'd met the bailiff), etc. Inevitably, I found myself in a few situations that my father had carefully avoided all his life: I was arrested by the police without any identity papers after driving the wrong way down a one-way street (though not deliberately, I hasten to add: the road signs had just been changed). And I saw for myself–though without succeeding in convincing my father–that such situations didn't kill you. Certainly, they sometimes caused me (entirely avoidable) problems, which in itself is a bit foolish. But being confronted with such situations and coming out of them in one piece has enabled me to live free from the fear that they might happen.

When asked about their fears, people often put speaking in public at the top of the list. As I quite regularly have to address large crowds, I'm obviously familiar with the things we all fear: losing the thread

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15. In France, drivers are legally obliged to carry their driving licence and car-registration documents with them.

of your ideas, stammering, having a coughing fit, making a joke that doesn't go down well, etc. Here again, I realized that even if it's quite an unpleasant experience to leave the stage knowing you have well and truly blown it, you don't actually die!

Our faux pas may be embarrassing, and some may even have serious consequences that we may have to suffer for a while, but we'll always recover from them eventually. And, in any event, their effects will be shorter and less burdensome than feeding our fears for the rest of our life!

Freeing ourselves from our fears, whether by understanding where they come from or by imagining the worst, increases our chances of reaching our goal! Let's remind ourselves that fear is not the end of the world. In fact, we can even make it an ally.

<p style="text-align:center">*</p>

Making an ally of your fear

Fear is going to be a player in your life,
but you get to decide how much.
Jim Carrey, actor

Beyond protecting us from real danger, fear can be a valuable ally in many situations. I experienced this for myself on holiday in the Ardèche. This beautiful region is a great place for enjoying different outdoor activities such as canoeing, via cordata and canyoning. Let's face it: walking on a wire across rock faces 40 metres above ground, descending rapids at great speed or diving eight metres into 9°C waters is enough to make anyone anxious! So why, we might ask, would anyone choose to scare themselves while on holiday? Simply because over and above inducing anxiety, these activities provide pleasure and exciting thrills, for which this fear is a small price to pay.

In general, a certain amount of fear is good for us because it encourages us to stay focused and attentive to what we're doing. We just need to make sure that it's not so great that it becomes paralyzing.

During this same holiday in the Ardèche, our instructors told us that almost all accidents occur when people start getting over-confident and thinking they're in control of the situation. This is obviously a foolhardy attitude given the nature of the activities, which are likely to be unfamiliar to most people who don't live in the area. Paddling against the current won't slow down rapids, it will simply exhaust the paddler. On the contrary, running the rapids requires that you gain speed: you just have to be careful to avoid placing yourself across the current. Walking along 40m-high rock faces requires you to have a good reading of the terrain, the roughness of the face, the trees and surrounding features that you can get a hold on, etc. Rather than looking down and feeling dizzy, you need to look ahead and try to identify the next step to take. The same applies in canyoning, where you need to tread carefully, securing each foothold, to avoid slipping on a rock or getting your foot stuck between two stones beneath a waterfall.

The same is true with work. Starting a new job, changing careers, becoming self-employed or working in an area where you don't have all the required skills: all this generates a certain amount of fear. Being afraid of not being up to the task, not being able to meet the challenges you might face or not managing to adapt to your new environment are natural feelings, and we need to accept them as such. But, as in the case of the Ardèche activities, if we decide something is a risk worth taking, we need to go for it and turn our fears into safeguards rather than inhibitors!

When faced with a scary situation, we need to stay humble, cautious and very attentive, taking on board all available information and asking for help when possible and necessary. These are the attitudes that will help us overcome our fears and cope with new situations. The question we'll need to keep asking ourselves is: what does this situation require of me? There's no point in trying to brave it out or cut corners in an attempt to brush aside our apprehension. Forcing your way rarely works.

In any event, it's essential to have someone alongside us, like a sports instructor, who 'knows the ropes', who has experienced what

we're going through and who will be able not only to help us anticipate and understand situations but also to advise and reassure us. This is the role of a mentor. When you're 40 metres above ground, just seeing the instructor beside you makes you feel safe, even though this may be purely psychological. Having a kind manager or colleague at hand when you are getting ready to give a presentation to a packed room of 200 people, has the same effect.

In short, fears are there to be overcome. By looking at the past to discover where they took root, we'll often realize that they have no relevance to our present situation. By looking to the future and anticipating the worst, we'll often realize that the worst is either not so terrible or extremely unlikely to occur. And when there is a solid basis for fear, we need to make it an ally–a source of motivation, concentration and attention–that will equip us to respond to the challenges of the situation we're facing. In any event, there's a way to prevent it from paralyzing us and blocking us from moving towards our ideal job.

Overcoming our fears will help us grow in self-confidence, which is essential if we're to fully express our singularity and find our way in life.

The Daenerys Targaryen way

BUILDING SELF CONFIDENCE

The problem with the world is that the intelligent people
are full of doubts,
while the stupid ones are full of confidence.

Charles Bukowski, writer

Daenerys Targaryen is one of the main characters in the epic series Game of Thrones, written by George R. R. Martin. The way her character matures throughout the seasons is a good illustration of how we can build self-confidence in the situations we face. We see Daenerys evolve from being an exile to the (reluctant) wife of a barbarian twice her age, and finally, after many twists and turns of

fate, a queen. (She is also, incidentally, the mother of three dragons.) Seeing how she gradually gains in self-confidence is what makes her character interesting. At the beginning of the series, she's full of self-doubt: She's been dominated and humiliated in her marriage and has lost her identity after losing all contact with her own people. She doubts her ability to be a good queen one day. But she has this natural authority about her and, most importantly, a mission that spurs her on: to abolish slavery and help those who have suffered from it. This strength, and the freedom she gains from season to season, have made her a feminist icon for many fans.

As she courageously makes decisions for the good of others, she gradually grows in maturity. It's as though she's discovering strength and courage that have been buried deep inside her. Over the seasons, she illustrates three key principles:

–self-confidence is revealed and developed as we take action
–the faith that others place in us mirrors the confidence we have in ourselves
–confidence is gained only through successes–and failures.

It's clear that Daenerys's authority flows from her increasing confidence–the growing confidence she feels in herself and that which she inspires in others. But this in no way stops her doubting, asking for advice, feeling hesitant and sometimes failing. Having self-confidence doesn't mean being 100 percent sure all the time and never experiencing failure. Doubt and failure can be powerful catalysts for reflection. As the saying goes, 'only fools never change their minds'. But confidence is the trigger that will enable us to take action and make decisions when the time comes to do so. The more difficult the decision, the more we might feel like we're taking a leap in the dark. Self-confidence is what enables us to take this leap, however big it may be.

We can't improvise self-confidence, so let's do everything we can to help it grow.

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Creating conditions for success

Finish what you started, human.
Kamaji, Spirited Away

How does success help us grow in self-confidence? Looking at the example of a few artists will help us understand this link between self-confidence and success. Bullied as a child and suffering socially as an adult (she was later diagnosed with Asperger's), Susan Boyle rose to fame after her standing-ovation performance of 'I dreamed a dream' from Les Miserables on Britain's Got Talent in 2009.[16] Since then, her self-confidence has grown as her successes have multiplied. We can also think of Jim Morrison singing with is back turned so much his shyness blocked him or George Clooney before becoming the ER sex symbol we all know. French rock singer-songwriter Matthieu Chedid is a changed man since his early television appearances, when he would hide behind the costume of his avatar, M, shy and seemingly ill at ease with his high-pitched voice and his body. Today, he's lost weight, no longer takes refuge behind his avatar, sings in a completely uninhibited way and fills stadiums. Success undoubtedly builds confidence, which gives a person a certain charisma and makes them more attractive.

One of the first conditions we need to create in order to become successful is a caring environment. Success may breed self-confidence, but becoming successful sometimes–often, in fact–means facing up to failures. To be able to handle setbacks well, we need to be in an environment where we don't feel we're being judged negatively. This is alien to the dominant culture many of us live in, where our experience is that failure is rarely valued.

16. Susan Boyle: https://www.youtube.com/watch?v=wnn6mShs1P8 (accessed April 2019).

A gracious environment is one where failures are forgiven, initiative is valued, and people are encouraged to try again. This is exactly the kind of environment that's highlighted in the Rocky films. The first film, Rocky (winner of Best Film and Best Director Oscars in 1977), introduces an ordinary guy from Philadelphia (Sylvester Stallone), who emerges from anonymity when he's offered the chance to face heavyweight champion Apollo Creed (Carl Weathers). After many adventures, doubts, training sessions and cheer-me-up songs, Rocky Balboa eventually loses the fight. But this defeat is not seen as one because he put up such a fine fight. In the eyes of his family, and indeed the whole city, he's the true winner. Given that no one wanted to produce the film and Stallone had to do almost everything himself, we can imagine that Rocky's story is in part his, too.

The other essential requirement for success–one that Rocky also fulfils–is that we need to stack all the odds in our favour and go all out to win! When I was a kid, a friend of my parents wanted to learn to play the tenor sax, a very difficult musical instrument to master. After only a few lessons, but full of enthusiasm, he decided to play in the band with my father and his friends at a party they were at. Bear in mind that the tenor saxophone is a transposing instrument, which means that when you play a C, it actually sounds as a B♭. When playing with a beginner saxophonist, it's a good idea to transpose your music so that they can play the notes they're used to playing. My father and his friends, though, being amateurs themselves, weren't able to do this. The result was a real cacophony, which caused much mirth among those present. My father's friend was teasingly blamed for being responsible for this hilarious hubbub. Although nobody meant any harm by it, he was very upset that night, completely lost his confidence as a saxophonist and never touched the instrument again.

It's actually a very sad story, because it reflects what many of us experience on many occasions throughout our lives: a feeling of injustice in a situation that causes a real loss of confidence.

To develop self-confidence, we need to make ourselves do things that are easy enough for us to have a chance of succeeding at them but challenging enough for the success to be worth something in

our eyes. It's all about gauging and understanding the level you're playing at! If you're just starting to learn to play the piano, trying to tackle a piece by Herbie Hancock, for example, is the best way to lose confidence and be put off for life. It's better to start with an easy piece–something you like–to prove to yourself that you can do it while having fun, before moving on to something a bit more challenging. This way, you'll avoid feeling defeated and, little by little, with practice, you'll find you're able to play more difficult pieces.

If you do experience failure, you need to see it as part of your long journey towards self-confidence.

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Coming to terms with failure

> I've missed more than 9,000 shots in my career. I've lost almost 300 games. 26 times, I've been trusted to take the game winning shot and missed. I've failed over and over and over again.
> Michael Jordan, basketball player

Talent is always associated with performance, achievement and success. But how many times do we have to 'fall' before we can get back up and show how talented we really are? All successful people–men and women, business leaders, great chefs, artists, athletes and scientists–will tell you the same thing: you rarely succeed the first time! Every single studio rejected Mickey Mouse, but Walter Elias Disney eventually built an empire from this character. Steven Spielberg was three times denied admission to the film school he longed to attend. Michael Jordan got kicked off his high-school basketball team. There are countless examples of this kind.

But, we might ask, in today's world, do we have time to fail? Can we afford the 'luxury' of a string of failures before we become successful? There are two schools of thought on this subject and I've been fortunate enough to experience both of them.

In France, if you want to obtain funds from a bank to set up a project, you would do well to have a clean financial record: if you've previously failed in business, it's unlikely that anyone will take the risk of supporting you in what could be another failure. If you try the same thing with an American bank, on the other hand, no one will lend you money if you've not already experienced the failure of a company or a major project. There, they hold the view that if you haven't failed at anything you've probably never attempted anything. They want to be assured, before they invest in a project, that the entrepreneur will aim high and take the risks that such a venture entails.

In California, the software publisher of Intuit[17] organizes what he calls 'failure parties', where failures are recalled so that everyone can 'collectively turn the page' and learn from their mistakes. In Montreal, FailCamp (a kind of 'failure conference') welcomes delegates who come not to boast about their careers and their successes but rather to talk about their failures, which is probably much more revealing. To err is human, so why deny it? It's better to accept failures and make good use of them than to disown them. As Yoda tells Luke in Star Wars: The Last Jedi, the eighth episode in the Star Wars epic: 'The greatest teacher, failure is'. As bizarre as it may seem, failure is enjoying success! Since we've started looking to Silicon Valley startups as role models, our perception of failure has begun to change. These startups advocate the test-and-learn model: it doesn't matter if you fail, provided that you learn from it. Incidentally, Nelson Mandela used to say, 'I never lose. I either win or learn'. The French philosopher Charles Pépin has devoted an entire book to this subject: Les Vertus de l'échec (The Virtues of Failure). In it, he explains that we need to move from a culture of failure to a culture of error, error being a means of learning. We need to rid ourselves of the way we were educated–by our families and at school–where failure was mostly experienced negatively.

17. For more on other companies who celebrate failure, see: https://www.happy.co.uk/8-companies-that-celebrate-mistakes/ (accessed April 2019).

Taking ourselves less seriously is also a way in which we can avoid over-dramatizing failure. Learning to laugh at it, rather than beating ourselves up, will help us bounce back more easily. Dan Klein, a Lecturer of Management at Stanford, has developed an interesting approach to this. When we work as a team and do something incredibly stupid, our first instinct is to wince, change our posture and feel uncomfortable, as if to inform others that we know we've made a mistake and that we're punishing ourselves for it. Dan Klein suggests, however, that when we realize that we've made a mistake, we laugh! This will allow us to express the fact that we're aware of our mistake, while sending the signal that we don't consider it that important: it's not because of one error that we're going to jeopardize our image or our reputation. We simply made a mistake, nothing more.

Better still, when someone else messes up, we can do the same–not to make fun of them, but rather to put them at ease and reassure them that it's not that important. When we begin to change the instinctive reactions that most of us have that tend to make us feel guilty rather than relaxed, we alter the whole way in which we perceive trial and error. This frees us from anything that might hinder our desire to have a go and to develop self-confidence.

Improvisation is also a great way in which we can learn to manage failure differently. Those of us who have tried it know that it inevitably involves making a whole succession of micro-failures: we go blank, we falter, we come out with something that's way off beam, we suffer a moment of embarrassment. But we can immediately counter this with a more striking retort … until the next blunder!

Improvisation thus acts as an accelerated training programme, where the repeated failures we suffer provide us with an equal number of opportunities to learn to get back on our feet and bounce back positively.

The famous scene in Taxi Driver where Robert De Niro, talking to himself, delivers the now-legendary line, 'You're talking to me?' was totally improvised by the actor, proving that improvisation can

even lead to great success. Improvising aside, it's no longer possible to succeed in today's world without taking a certain amount of risk, which necessarily entails the possibility of failure. As Woody Allen said, 'If you're not failing every now and again, it's a sign you're not doing anything very innovative'.

Remembering why we're prepared to suffer these disappointments is another factor that will enable us to successfully navigate our way to our ideal job.

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Enjoying your victories

The first and greatest victory is to conquer yourself
Plato, philosopher

Once we've created the conditions for success and learned to deal with potential failure, we need to be able to enjoy our victories, because this is key to growing in self-confidence. Different cultures vary wildly in this respect.

It's well known that in the United States, those who embody the 'American dream' and have succeeded in life are anything but hesitant about letting this be known. We need look only at the sumptuous villas of American celebrities like Justin Timberlake or Rihanna for proof. It's not so much the size of these homes that's impressive as all the visible trappings of wealth they display! Inside, the house will have its share of Roman Empire-style marble columns, while outside, a yellow Lamborghini will shine brightly next to a Rolls-Royce or Aston Martin–or perhaps the latest Tesla, for the more modest and environmentally friendly. In many other countries, those who display a fraction of that wealth when they've been successful will immediately be accused of showing off, which is seen as tanta-mount to indecency. Our victories are more modest, probably because any expression of joy–even the merest hint of satisfaction–is quickly deemed excessive. We often have more empathy with those

who've almost won, like the cyclist Raymond Poulidor (nicknamed 'the eternal second'), who never quite got to wear the leader's yellow jersey in the Tour de France.

Moreover, our relationship to money is fairly closely linked to our relationship to success. Winners of the US Open tennis tournament, held in New York, proudly brandish a cheque with a lot of zeros at the moment of their victory, as if pointing out that they were the best and fully deserve their reward. At the French Open, held at the Stade Roland-Garros in Paris, on the other hand, winners, while they certainly get to pocket a nice cheque, keep it discreetly tucked away there. They are allowed to brandish only a fine trophy.

Of course, whenever we compare different cultures, schools of thought or ways of life, it's difficult to avoid falling into caricature. But my aim here is simply to emphasize one thing: it's easier to gain in self-confidence when we're allowed to freely celebrate success, receive the enthusiastic congratulations of others and give tangible form to it as we see fit, rather than when we feel obliged to enjoy it discreetly, viewed almost suspiciously by others. Whichever side of the Atlantic we live, and however we go about it, learning to enjoy our victories is essential. It builds in us not only self-confidence but also the courage that will enable us to cope with future challenges.

Elon Musk is often mentioned when we think of entrepreneurial success and megalomania (which can result from relishing success a little too much). But it's easy to forget the failures and difficulties he's experienced. After selling PayPal, he created three companies in the space, automotive and solar-energy industries: SpaceX, Tesla and SolarCity.

In 2008, SpaceX suffered its third failure to launch the Falcon-1, a launcher belonging to a new family of economical launchers, capable of putting just over 600kg into low-Earth orbit. He had to wait for the fifth Falcon-1 flight in 2009 to put a commercial satellite into orbit. Also in 2008, Tesla was on the verge of bankruptcy: the production costs of the electric cars was very high and the

market still very immature. SolarCity, a company with the aim of manufacturing, financing and installing solar PV panels, was struggling to get the funding it needed. And while all of this was happening, Elon Musk was getting divorced, leaving him almost bankrupt and forcing him to borrow money in order to live and remain in business, even though he had earned millions with the sale of PayPal. As I write these lines, rumours are rife that Tesla is again facing bankruptcy.

It's essential that we learn to stop and take stock a moment after a big victory–not to boast about it, but to assimilate it, to let it sink in–and allow self-confidence to rise up within us. This self-confidence, which can only truly be instilled in us through success, victories and achievements, serves as a base from which we can continue our journey and reach our goal. It gives us reserves on which we can draw in bad times–a bit like the 'extra life' in video games that enable you to continue playing when you've taken a blow.

Growing in self-confidence can also heal us of the widespread 'imposter syndrome' that so many of us suffer from. This is the feeling that we're somehow not 'legitimate' in what we're doing, that we don't fit in, that our 'deception' (even if there's clearly been none) will eventually find us out. Having been self-taught in most of the various activities I've tried, I've experienced that feeling often. It passes with time, as we convince ourselves that, wherever we've come from, like Daenerys Targaryen, we can ascend to the throne of our lives. So, over time, confidence becomes a faithful ally and constant companion that enables us to embrace our dreams.

The Hollywood way

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EMBRACING YOUR DREAMS

I believe in everything until it's disproved. So, I believe in fairies,
the myths, dragons. It all exists, even if it's in your mind. Who's to say
that dreams and nightmares aren't as real as the here and now?
John Lennon, dreamer

This section echoes the three situations we looked at earlier in this chapter: not knowing what we want to do, knowing what we want to do but not knowing how to do it, or simply not daring to take the plunge. Dreams are both our destination and the motivation we need to reach it. We've not learned how to dream. Or, more precisely, we don't know how, as adults, to retain this faculty that was so natural to us as children.

There are many reasons why we lose this ability to dream: concern about what other people think, the tenacity required to cope with the reality of our life, or simply the fear that our dreams won't live up to our expectations. How can we move past these various blockages?

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Coping with the way others see you

After a while, you learn to ignore the names people
call you and just trust who you are.
Shrek, green ogre, Shrek the Third

In the film Bend It Like Beckham, a teenage girl of Punjabi origin living in Hounslow, West London, Jessminder 'Jess' Bhamra (played by Parminder Nagra), idolizes David Beckham and is passionate about football. Her parents, although they love her dearly, take a very dim view of this as they have very precise ideas about the sort of education a young girl should receive and the kinds of activities

she should involve herself in to keep her place in society. Jess never-theless continues to play football, despite her parents' disapproval.

During a game in a park with friends, Juliet 'Jules' (Keira Knightley), a girl of her age from a very different background, spots her and invites her to join her women's football team, coached by the handsome Joe (Jonathan Rhys-Meyers). Jess lies to her parents so that she can join the team and fulfil her dream. The film shows, of course, that the hardest thing isn't 'kicking the ball' but coping with other people's opinions of us and having enough determination and courage to go after our dreams.

This film follows in the great tradition of such films as Dirty Dancing, Flashdance and Cool Running, whose heroes pursue dreams that others consider are much too big for them. As Vishen Lakhiani, author of The Code of the Extraordinary Mind, explains, challenging the established order and refusing to follow the ready-made paths proposed to us leads to disputes and reproaches from others. Subconsciously at least, everyone may know they're going around in circles like a hamster on its little wheel, but no one wants to admit it to themselves, and they certainly don't want to be confronted with the example of someone who's breaking free.

This is the experience of everyone who decides to switch from following the path that their studies or their social

circle would naturally lead them down. They show a desire to free themselves from determinism, from what the French sociologist, anthropologist and philosopher Pierre Bourdieu called 'habitus'. But can we, in fact, choose not to embrace our dreams? On the one hand, recalling the carpe diem of Dead Poets Society, we say no: we have only one life, it's short and the danger is that we end up following other people's dreams. Or worse, we follow their fears–the fears that drove them to avoid taking risks themselves, with the result that they're now unhappy. But on the other hand, we think about what it can cost to pursue our dreams. What are our chances of realizing them? What will others say if we fail? What will we have really lost if we choose to pursue the 'ideal' rather than settle for the 'acceptable'? One thing is certain: embracing our dreams and pursuing them requires tenacity.

<center>*</center>

Persevering

<center>
Everything is possible for the person who dreams,
dares, works and never gives up.
Xavier Dolan, filmmaker
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The World's Fastest Indian is based on the true story of an atypical New Zealander, Burt Munro, who hit the headlines by breaking the under-1000cc motorcycle speed record, still unmatched today (most likely because of current security standards). In the film, Anthony Hopkins plays the 68-year-old man, who is partially deaf, has heart and prostate problems and is living penniless in the suburbs of Inver-cargill, where he continues to tinker with his old (1920) 600cc Indian Scout motorcycle to give it ever more power. When the financial opportunity finally comes, at his advanced age, to test it out at the Land Speed Grand Championship in Salt Lake City, he decides to try his luck. Without any equipment and totally out of sync with the bureaucratic, sporting and safety-conscious mire of the famous race track of the time (he would never have managed to compete today), he shows a naive and dogged determination in pursuing his dream, and we watch him as he sets a new speed record of 295 km/h (a faster record of 331 km/h was not officially timed).

On a more musical note, Begin Again tells the story of Gretta (played by Keira Knightley, in a typical role for her), who's trying to break into the music business by playing in bars and has just broken up with her boyfriend. She's spotted by Dan (Mark Ruffalo), a former record company executive, who's also going through a rough (and artistically barren) patch in his life. Despite lacking the financial resources needed to record an album in the traditional way–in a studio with professional musicians–they still manage it, thanks to the brilliant idea of using the city that never sleeps as a giant recording studio, and recording the tracks on the streets, in the parks and on the roofs of buildings. It is, of course, a success–but not in the way we would've imagined.

All these films show that tenacity–the ability to hold on to our dreams, whatever difficulties may arise–is essential if we're to reach our goal. The heroes don't suffer for their choices in these films, but they do have to fight to prevent their dreams being stifled by the difficulties they encounter.

Leaving Hollywood for a moment and returning to our everyday lives, we can use the example of following a diet to illustrate what we need to do or not do to achieve our goal. There may be many different reasons for going on a diet. We may need to lose weight before having an operation, for example. In such a case, we'll be required to stick to very specific dietary guidelines, which we'll most likely follow out of sheer necessity, meaning we'll probably return to our usual eating habits as soon as the operation is over–and discover the kilos we'd lost patiently waiting for us in the kitchen! Of course, we reached our goal, but only temporarily, and our victory was short-lived.

On the other hand, we may choose, by and for ourselves, to follow a diet because we want to lose excess weight, so that we feel better about ourselves, for example. Here again, there are two sorts of people: those who, in order to achieve their goal, force themselves to follow a programme that they don't enjoy or doesn't suit them in order to get quick results, and those who, knowing themselves a bit better, seek to establish eating habits that are more in keeping with their personality, even if the weight loss will take a little longer to achieve. In general, dieting for the former is like a sentence with no right of appeal: they may lose weight quickly, but they'll put it back on again within a few weeks or months, because they won't be able to restrict themselves forever to a diet that doesn't suit them. Those who know themselves better and are prepared for weight loss to take a little longer will not only manage to keep to their ideal weight but will also adopt new habits and discover better ways to eat and enjoy life. The issue is to be able to broaden our horizons and change our eating habits, while ensuring that the efforts we need to make are acceptable–or at least tolerable–enough for us to be able to maintain them long term.

So, it's less a case of 'soldiering on' than of remembering why we're undergoing these hardships, because, as we all know, our ability to

exert effort isn't infinite–unlike our dreams, which may never die. There remains one last pitfall to avoid, which is the disappointment that can hit if we achieve our goal but it doesn't lead to the happiness we'd hoped for.

<div align="center">*</div>

Dealing with disappointment

<div align="center">
Beauty is bought by judgement of the eye.

William Shakespeare, Love's Labour's Lost
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Another stumbling block we can encounter–and it's one that we don't give enough thought to when we're deciding not to give into peer pressure but to pursue our dreams–is becoming disillusioned when at last we're in reach of them. Those who've been lucky (or unlucky?) enough to meet one of their idols perhaps have an inkling of what this is like. When we idolize someone–an actor or singer, for example–we imagine all sorts of things about them. We can idealize them and attribute qualities to them when actually we've no idea what they're really like. Then, when we have the chance to get close to these objects of our admiration, we realize, more often than not, that we've been living in a fantasy. The idol in question may well be a nice person, but how could they hope to compete with the imaginary figure that we've created over the years, based on all kinds of conjectures?

The film Almost Famous portrays this well. It tells the story of William, a 15-year-old aspiring journalist and music lover, who gets hired by Rolling Stone magazine to tour with the rock band Stillwater, of which he's a fan. This is, of course, an extraordinary experience for the young man. Over the course of the film, he experiences many joyful moments but also a lot of disappointment, not least the disillusionment of discovering that the band is motivated less by the love of music than by the lifestyle that goes with it: groupies, drugs, etc. The pure love of music that William had projected on his idols, he sees–and only indistinctly–only in Penny Lane (played by

Kate Hudson) and in one of the musicians (Billy Crudup). The film is all the more interesting because it relates the experiences–more romanticized, of course–of its director, Cameron Crowe, who joined Rolling Stone when he was 16 years old.

As with artists, so it is with our dreams, whether they be romantic or work related. How can reality ever live up to fiction? The example of film directors is illustrative of the type of disillusionment we can experience. When we think of filmmakers, Martin Scorsese or Steven Spielberg may spring to mind. We tell ourselves that there can't be anything more incredible than imagining a story, however far-fetched (an amusement park with dinosaurs, for example), and then one day seeing this story come to life on the big screen in front of millions of amazed spectators. Although this feeling must, indeed, be incredible, few of this 'elite' profession will have the chance to experience it. For 99 per cent of film directors around the world, making films is primarily about fundraising. This is even the case for Martin Scorsese, who often struggles to find funding for his films, despite his fame. If we dream of becoming film directors, we'd better start by asking ourselves if we like bankers, because we'll be seeing a lot more of them than actors! And when we're not spending our time with bankers, we'll be spending it trying to convince the executive producers of film studios of the merits of our idea. Bear in mind that, today, even if some producers still love cinema, many of these influential bosses are more focused on box-office takings and merchandising than on artistic considerations. This is, of course, a caricature, but I'll leave it up to those who know this world to decide whether I'm exaggerating or not.

Pursuing our dreams requires courage and determination–and can sometimes result in failure. Those of us who've had the chance to make our dreams come true can sometimes feel disillusioned because they're not what we'd imagined. And this can be deeply distressing. But the word 'dream' carries with it the possibility of disillusionment. Pursuing it therefore also entails being ready to face disappointment. Our dreams are definitely worth it!

So, we've redefined what work means, and we now have some formulas for trying to discover what our ideal job is and the best way to get to it. Overcoming our fears, gaining self-confidence, embracing our dreams and persevering are all ways to ensure that we stack all the odds in our favour to achieve our goals. One of the keys is to find the delicate balance between:

–listening to ourselves–exploring every aspect of our singularity, of what makes us unique, in order to remain in perfect harmony with ourselves, and

–listening to our environment–the signals it's sending us, the messages it's whispering, so that we don't persist in the wrong direction. And we need to take care not to confuse the destination with the road that leads to it.

The goal is to take on the work that we view as ideal–'work', here, meaning that which enables us to fully express our singularity and play our unique part in building society. The path is everything that enables us to make this contribution–however we go about it–and thus be self-fulfilled.

In this context, the company, with everything that it can provide us with, can present us with an interesting path, so long as we redefine its mission and know how to navigate it without losing ourselves.

The company

FROM FRUSTRATION
TO FULFILMENT

Where there's a will there's a way.
Winston Churchill, politician

On the French Radio Nova programme *Plus près de toi* ('Closer to you') on 22 January 2018, Edouard Baer[1] waxed lyrical about the illusion we call the weekend. He used a great expression for wage earners that we often associate with companies:[2] '*La vie salariée, la vie obligée, la vie contrariée*'–'The life of those who are salaried, constrained, frustrated'. Most of the time, it's true, we feel constrained, stifled, suffocated in our places of work. We have this disagreeable sense that no one really cares about who we are, and we feel we're expected to squeeze ourselves into a mould that isn't designed to fit us.

But what if the company, rather than being a place we have to suffer for ten hours a day for more than 40 years, was to become somewhere we could thrive? What would need to change for it to become a place where we could fully express our singularity? What if it could become a sort of helpful host that welcomes us along our journey towards our ideal job? Of course, reading these questions,

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1. Edouard Baer is a French actor, screenwriter, film producer and radio personality. More informations: https://en.wikipedia.org/wiki/%C3%89douard_Baer

2. Although, of course, we might be employed in a different type of structure.

we may well be thinking to ourselves that it's not just a few changes here and there that are needed, but a complete overhaul of the whole system. Be that as it may, it remains possible, or at least desirable. And certainly, there are signs indicating that a real desire for change is emerging.

First and foremost, the notions of commitment, happiness at work, job satisfaction and motivation are invading the professional media. Specialist magazines, special-interest TV channels and management and HR conferences are full of the subject–evidence of the need for changes to be made to the world of work in general and to companies in particular.

Company mutation is also inherent in the famous digital transformation that so many organizations are trying to implement. The challenge in this transformation is to take advantage of the many opportunities provided by new technologies to work in a different way, one that will benefit both employees and the company. The advantage for employees is that digital technologies make it possible to rethink the workspace and its interactions and offer greater freedom to everyone. While for the company, if employees feel better about themselves and are more motivated in their work, they'll be more productive and so profits will increase. Although the word digital is linked to transformation, what we're talking about here is a much more profound change, one that goes way beyond the digitization of certain processes and practices. It's one that jeopardizes the traditional notions of power, hierarchy, authority and management.

Incidentally, pop culture has got its finger on the pulse here. Just look at the number of TV series set in companies: *The Office*, *Silicon Valley*, *Suits, Trillions* and *Corporate*, to name just a few. Once, series tended to caricature the business world (do we even need reminding of the unspeakable *Dallas*?). Today, they offer clear–sometimes even caustic–observations and a perspective that can be a true source of inspiration for entrepreneurs.

Antonio Gramsci, an early 20th-century Italian philosopher and politician, used to maintain that a crisis occurs when the old is disappearing but the new is yet to emerge. Based on this definition, it's

clear that the company is in crisis. This chapter puts forward some ideas that may enable the company to emerge from this crisis to the benefit of all those working there.

The *Modern Times* anti-method

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REDEFINING THE MEANING OF THE COMPANY

Every human group acquires its wealth in communication, mutual aid and solidarity aiming at a common goal: the development of each individual with a respect of differences.
Françoise Dolto, paediatrician

In *Modern Times*, Charlie Chaplin portrays the life of a factory worker employed on a production line. At the mercy of his employer's bidding, he's subjected to a succession of ill treatments that lead him to a nervous breakdown (the word 'burnout' had not yet been invented) and land him in hospital. As always, Chaplin transforms gloomy situations into great moments of comedy, especially in the legendary scenes where he's force-fed by an 'eating machine' that goes haywire and is made to tighten nuts at a frantic pace on an accelerated assembly line.

Although made in 1936, this film remains incredibly modern because, unfortunately, the sort of working conditions that force employees to be increasingly productive are still all too common in too many companies. The eating machine has cleverly disguised itself as our working conditions, where we're urged to stay in the office as long as possible. And the accelerated assembly line has taken on the guise of e-mails and other business communications, which pressurize us to be more responsive, in a sort of 24/7 unspoken obligation.

The reason I've used a counterexample rather than a positive example to illustrate my point here is that, unfortunately, there are few– if any–pop-culture portrayals of the sort of company we'd like to work in. Let's be clear, this chapter is not an indictment against the company

per se; it's not about putting it on trial or denigrating its current operation. Rather, I want to describe what I'd like it to become tomorrow, if not sooner, both for our sake and in the interests of the company itself.

Etymologically, 'entrepreneur' means someone who undertakes, begins or implements (something). But while a company often begins with an idea that has formed in the mind of one or more of its founders (or entrepreneurs), the venture is always pursued collectively. The original purpose of any business is to make available to potential customers services or products that don't yet exist and that provide a solution to a range of issues. The reasons why entrepreneurs start businesses are numerous and diverse. They can range from the desire to get rich to wanting to change the world, with, between these two extremes, a whole variety of nuances: earning a living; providing greater well-being to targeted customers, responding to a malfunction in a particular area, etc.

Today, the company is no longer concentrating solely on its customer community but is increasingly focusing on the people who work there–in other words, many of us! Vineet Nayar's book *Employees First, Customers Second: Turning Conventional Management Upside Down*, explains the reason for this change well.

If the notions of desire, motivation, commitment, satisfaction and even happiness have entered the language of the business world, it's because companies have understood that they can only hope to be competitive if we like working for them and feel at least some connection with what they're trying to achieve. And because, as Michael Porter said in 1985 in his book *Competitive Advantage: Creating and Sustaining Superior Performance*, the challenge for a company is no longer how to lower costs or rationalize its production plant to become more competitive but rather to find ways to differentiate itself, to stand out from the crowd. And this depends almost entirely on the ability of its employees–its so-called human capital–to innovate! Innovation is not a repetitive activity that can be performed with no interest in the field of work; it requires a certain commitment and motivation.

So, it follows that if lots of companies are rethinking the way they're working today, this is due less to a growing philanthropic

awareness than to economic necessity. With their experience of a somewhat authoritarian and top-down structure,[3] they still throw out injunctions to their employees here and there to 'be happy' or 'be motivated'. But, as we might imagine, this doesn't work: happiness and motivation can't be decreed. The challenge is to create conditions where we can thrive, because while, like happiness, fulfilment can't be decreed, it can most definitely be promoted.

Companies need to reinvent themselves, to change from being simply places where we work in exchange for pay to becoming places where a community of people–people who are looking to be fulfilled, both individually and collectively–are motivated by a common cause. Companies need to move from a world where it's 'each man for himself' to one of interaction! Which is what we hope the society we'll live in tomorrow will look like, too.

This transformation will mean revisiting the '3Ws' that make up the company: its workforce (the company's life blood), its workspace (the working environment) and its workflows (the interactions at work). How can we develop these three essential elements to help the company become a true community?

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The workforce

The organization cannot demand the loyalty of its people:
it has, instead, to earn their loyalty.
Charles Handy, writer

To become this community of individuals seeking to complete, together, a project that's important to them, one of the first things a company needs to do is learn to view the members of this community differently. It could start by revising the term 'human resources'.

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3. A top-down approach refers to a company that's governed by decisions coming from 'on high', i.e. top management and the directors.

The word 'resource'–more appropriate for designating a material than a human being–is ill-suited to the individual. A material resource has no state of mind, desires, moods, joys, aspirations, fears, doubts, ambitions, dreams or problems. And it certainly isn't unique! If we're merely resources, we'll naturally hear 'How are you doing?' in the morning as nothing more than a simple courtesy, and we shouldn't be surprised if the company decrees what we have to do rather than trying to find out what we would like. The fact that we're relegated to the rank of mere resources, denying everything that makes us human beings with our own will, is precisely what Chaplin denounces in *Modern Times*.

This has tended to change since the mid-2000s, with HR managers–formerly staff administrators–attempting to become human-capital managers or talent managers. The basic idea is to enable each of us to find the place that best fits us within the organization, a place that's in line with our desires, skills and the needs of the company (which is reminiscent of ikigai).

HR departments are also trying to change human resources directors into directors of human relations. Some companies are even introducing new acronyms like CHO (Chief Happiness Officer) and CPO (Chief People Officer). The acronym CPO is much more appropriate than CHO because, while HR departments need to be responsible for the experience of work they offer us, whether or not we're happy is down to us. Of course, if our work is fulfilling, it can certainly contribute to our happiness.

In any event, when we see how the cinema deals with human resources–for example in Jason Reitman's *In The Air*, Laurent Cantet's *Human Resources* and Nicolas Silhol's *Corporate*, where HR means little more than severance schemes or worse–it's clear that there's still some work to be done to raise the profile of this company function.

This being the case, if we want our singularities to be recognized within the company, it's better to talk about us as people at work rather than as human resources. This is all the more important as 'human resources' generally refers to employees, yet today, with

the rise of what's known as the 'gig economy'[4] and the number of self-employed people on the job market, companies are working with many more people than just their employees. When we talk about the people who work for a company, we're actually talking about a whole ecosystem: employees, certainly, but also partners, service providers, consultants and freelancers. In fact, it's possible to work with a company in all sorts of ways.

For example, Uber currently relies for all of its turnover on drivers it doesn't pay, claiming to be a platform for connecting drivers and users.[5] Clearly, this is rather questionable from an ethical and social point of view, because, while drivers may connect for 50 hours a week and take thousands of hours of fares, they will never benefit from any of the advantages enjoyed by employees. My intention here is not to join what is an already intense debate on whether the gig economy is a new economy of freedom or of insecurity, but simply to illustrate the issue of people at work and their status.[6]

Workers should no longer be divided into two groups: the ones that the company employs (who 'belong' to it) and the others. All of these people should be included in their community in their own right! The question then is how we can get people who can no longer be managed in the same way to work together. Notions of authority, hierarchical relationship, status, etc., need to be fully revised because of the diversity of people who contribute to a company's mission. How can we motivate individuals who come from such different

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4. This new form of economy uses a metaphor to compare the self-employed to musicians who earn their living working with different bands, playing in different concerts, without a stable job.

5. This is true at the time of writing, but it's quite possible that by the time you read these lines, the status of drivers working with Uber will have changed. I apologize in advance if such is the case.

6. The following articles highlight issues raised by the controversy surrounding Uber in the spring of 2019: https://www.bbc.com/news/business-48190176 (accessed July 2019);

https://www.theguardian.com/us-news/2019/mar/22/uber-lyft-ipo-drivers-unionize-low-pay-expenses (accessed July 2019);

https://www.nytimes.com/2019/05/10/opinion/uber-ipo.html (accessed July 2019).

backgrounds and who, in some cases, aren't interested in a career within the company because they're not part of it?

Ultimately, the challenge for the company merges with the purpose of this book: to enable each of us to find fulfilment in our work, for our own sake and for the common good. In the process, the notions of status, authority, power and hierarchy–which, incidentally, digital transformation is already attempting to replace with notions of influence, transparency and collaboration–become invalid. What matters is that the company is able to clearly state its mission, its goals and the purpose of its existence, and to rally to its cause those of us with similar, or convergent, goals.

One of the great strengths of startups is their ability to state the reasons for their existence very clearly: Instagram was created to allow us to enhance a moment of our life and share it; Deliveroo, so that we can eat well at home; Trainline (formerly Captain Train), to promote train use throughout Europe, etc. Of course, the promise isn't always kept, but the mission is, at least, clearly stated. I'm not sure whether everyone who works with a top-ranking company has a clear idea about the missions of these companies.

The workforce of a company is therefore no longer simply its human resources, but rather all the people who make up its community and who, through their work, contribute to achieving its primary mission. This means that we also need to revise the traditional concept of offices (meaning here the company's premises) to move towards a broader concept of workspace.

<p style="text-align:center">*</p>

The workspace

I have never gone into an office without
wondering how I could escape from it.
Jacques Sternberg, novelist

Today, we're no longer systematically obliged to meet at the office to work with others. The growing importance of the digital in our

lives–broadband, smartphones and applications boosting collaboration–has changed things. Today, we can interact with others from anywhere, all the time (for better or for worse). Hence, acronyms like ATAWAD (AnyTime, AnyWhere, on Any Device). This ability to overcome space-time constraints has, of course, many consequences for the way we work.

Most importantly, we're increasingly seeking to have working conditions that suit us, which means completely rethinking the workspace. This will still include company offices, but also our homes, co-working spaces, 'coffices' (a contraction of coffee and office), and even cafés and other places we like to work. The issue is about aligning our preferred way of working with what we need to accomplish. In other words, it's about companies respecting our singularity.

Some people will be more comfortable preparing a presentation stretched out peacefully on the sofa at home, others will prefer sitting in a local café, while others will work better at the office.

When we do decide to go into the office, the company should ensure that we have the most pleasant working environment possible, so that we can give the best of ourselves. Companies like BNP Paribas Real Estate (in the corporate real estate sector), Flying Tiger (in the retail sector) and Dorchester Collection (a luxury hotel operator) have decided to treat their employees as consumers. They offer them an environment similar to the environment offered to their customers–in other words, workspaces that are a far cry from the little cubicles of open-plan offices in *The Matrix*. They're spacious and well furnished, with lots of plants, where workers can have coffee, lunch and even take a proper siesta rather than nod off in front of their computers after lunch. In short, workspaces that are pleasant (an adjective rarely associated with the office) to spend time in.

Some companies have pushed the concept of workspace planning even further. Asana, a Californian company manufacturing task-management software, offers each of its employees up to $10,000 to furnish their office as they wish. One popular choice is a motorized sit-stand desk, which raises or lowers with a flick of a switch, allowing you to work either sitting or standing, thus preventing lots

of back problems. This sort of initiative from companies is fairly rare, let's face it.

The idea is not to turn the company into a huge toy store, like the one where Tom Hanks jumps around on a giant piano in his first block-buster, *Big*.[7] Nevertheless, some companies in Silicon Valley are not far from offering very similar working environments in the hope of making themselves more attractive to candidates–a ploy that may, in fact, work, given that the New York store that featured in the film has since become a popular attraction for children. The most important thing is the intention behind all the initiatives mentioned. The office needs to be redesigned as a space where we can be together, find our place and feel good. Rather than partitioning everything, making it easy for us to isolate ourselves and work alone in our own little corner, it needs to become a place of interaction and collaboration, a good environment for serendipity.[8] At Facebook, some say that meetings take place wherever Mark Zuckerberg, its founder, happens to be, which suggests that meeting rooms are not the only place where we can mull over new projects and ideas together. The challenge is to create areas and cosy spaces in the office where we can sit comfortably to 'brainstorm'.

On the other hand, to encourage us to work where and when we want to, the company also needs to provide a suitable digital environment: laptops, collaborative software, etc. Computer equipment is of paramount importance as it will either facilitate or complicate the reinvention of the workspace. This is especially true today, given that launching a video conference with people scattered all over the planet, remains a challenge that has often been caricatured.[9] So let's not make things more difficult than they need be.

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7. The toy store in question is FAO Schwarz, which at the time of filming was on New York's 5th Avenue. This store was closed in 2015, due to financial difficulties and the high rent, but a new flagship store was opened at 30 Rocke-feller Plaza in November 2018.

8. Serendipity, here, is the art of bringing about fortuitous encounters that encourage new ideas.

9. For a comic take on what some video conferences can look like: https://www.youtube.com/ watch? V = z_tiqlBFjbk (accessed May 2019).

Freedom is therefore one of the fundamental distinguishing features of this new workspace! More precisely, it's about the company being able to respect our singularity and our way of working. This obviously has an impact on the way we interact within the community.

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Workflows

When two forces are combined, their effectiveness is twofold.
Isaac Newton, physicist

The company needs to be completely redesigned around the concept of collaboration. In most cases, even today, it doesn't function in this way simply because of past legacy. A hundred years ago, right in the middle of the second industrial revolution that made Taylorism its mantra, it made sense to differentiate between those who did the thinking and those who carried out the work.[10] The rate at which problems arose was such that the solutions developed had a long enough lifespan for some people to design them while others applied them.

It's what Chaplin was denouncing and caricaturing in *Modern Times,* with his highly automated factory running on assembly-line work, and the man who directs it hidden behind his large screens, as though to mark his distance from the workers. We see Chaplin and his fellow labourers performing mechanical and repetitive actions as they tighten nuts on boards. They're not asked to think, simply to carry out actions devised by others, like totally dehumanized robots.

In addition to these social considerations, what invalidates this way of working today is that new problems are appearing before we've even had time to find solutions to the old ones. Which takes us

10. Taylorism was a trend that evolved from the theory of the management of workflow developed by Frederick W. Taylor in the early 20th century. It separated, on the one hand, those who devise solutions (Organization and Methods) from, on the other, those who execute them (the workers). Taylorism was widely applied in the automotive industry, notably by Henry Ford.

back to the ideas we looked at in the first chapter of this book about the need to be creative and learn how to learn rather than falling back on ready-made solutions.

The pyramidal business structure was entirely based on the idea that the lower we are in the organization, the less we're there to think, reflect or give an opinion. That was the work of those higher up, the famous managers with their miracle solutions. However, in order to find solutions to increasingly complex problems and be able to handle present and future disruptions revealing problems no one has ever faced before, it's essential to make use of the entire workforce. Collaboration is no longer merely an option; it's the only real performance lever for companies! Companies are moving towards flatter organizational structures that erase the notions of verticality and hierarchy and encourage exchange and interaction, because the issue is no longer who is managing whom, but rather who can help solve this or that problem.

In addition, the complexity of the problems is such that a wide variety of skills are required to solve them. So, the company organizes itself around projects rather than by departments, assembling and disassembling so-called agile teams responsible for working on solutions or carrying out projects. With this objective in mind, we're temporarily united with others in a team in relation to our desire and ability to develop a solution. This is why it's important that offices are no longer partitioned, but instead have spaces than can accommodate a group of people while they're collaborating on a project.

In this setting, the role of managers changes completely. Their job is now to gather, organize and motivate teams that are best able to execute the projects for which they're responsible. It's a bit like in films where we see the hero, or heroes, searching for their future partners to undertake a project, each team member having specific talents that complement those of the others. The ultimate aim is to have all the skills required within the team.

Sometimes, two or three people are enough; at other times, more than a dozen are required to ensure that all skills likely to be needed are covered.

Ocean's Eleven is a perfect example of this new managerial way of working. In the film, Danny Ocean (played by George Clooney) brings together ten associates, each an expert in their field, to pull off a heist at a Las Vegas casino run by Terry Benedicit (played by Andy Garcia). Among them are a con man, a very agile pickpocket, the traditional explosives expert, a computer expert, etc. Another example, but in a more musical vein, is *The Commitments*, which features two unemployed Irishmen who want to set up a soul band. To find the other band members, the manager holds auditions at his parents' home. All sorts of musicians show up, playing a variety of different instruments and with a range of different musical styles.

The role of any good manager is no longer to (supposedly) know everything or 'play all the instruments', but rather to assemble the people with the best skills so that they can give the best 'performance', in accordance with what each person wants to deliver. The role of collaborators also changes: they're now responsible for providing the best possible service, in accordance with the desires they've expressed and the talents they've declared. In other words, if, in this new type of organisation, we're given the opportunity to express our singularity and move towards our ideal work, then we have a duty to give the best of ourselves, in our own interest and in that of the group.

This is the type of company–where each of us is entirely responsible for taking action as we see fit–that the notion of the freedom-based company, popularized by Isaac Getz and Brian M. Carney in their book *Freedom, Inc.*, is referring to. The idea is to turn the famous catchphrase '1 + 1 = 3' into a reality; in other words, to ensure that our singularities are not simply added together but are multiplied, enabling us to accomplish something together that's greater than the sum of the parts.

There's no doubt that this version of the company–which we hope will become the norm in the future–will give us an incentive to go to work. Here, we'll have the chance to express our singularity and work in our own way, taking advantage of the conditions and the opportunities for interaction offered to us. The challenge for company directors and managers will be to ensure that the mission of the company is ultimately in line, or at least convergent, with our individual goals.

The *Brazil* anti-method

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THRIVING IN THE COMPANY

You have to make sure that, in all circumstances,
you can choose your life.
Jean-Paul Sartre, writer

Brazil, directed by Terry Gilliam in 1984, portrays well the influence exerted by a bureaucracy on the individuals who have to endure it. At first glance, as the director himself has explained, *Brazil* is about an ordinary civil servant, Sam Lowry, who works in a huge bureaucratic machine, the Ministry of Information, of which he quickly becomes a victim. It's also the story of someone who doesn't take reality seriously and who wastes a lot of time dreaming. The film contains two particularly interesting dimensions. The first–which is taken to extremes here–highlights how absurd the functioning of an organization can be. The second reveals how this absurdity drives those subjected to it to seek an escape from their daily grind, 'compelling' them to become inefficient.

As Johan Gautier, one of the leaders of Brainlinks,[11] likes to say, 'If a Martian was to land on Earth, depending on whether he landed inside a company or on the street, he could have the impression that he'd landed on two totally different planets, even though they're only metres apart'.

In most cases, the company is like a madhouse full of schizophrenics! We wear our favourite sweatshirt, jeans and trainers at the weekend, yet here we are (unless we work in a startup) in a suit all week long from 9am to 7pm. We work hard to be able to afford the latest Apple MacBook, while at work we're given a superb 18kg laptop. We spend our time on the latest social-media networks, but our company software dates back almost as far the Minitel era.

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11. Brainlinks is a French startup aimed at strengthening the commitment of a company's employees.

This, then, is the working environment in which we exist. And in terms of how we function within this framework, the disparity is even greater. In our private life, we're spontaneous and curious, we like to express our ideas, communicate and learn about everything. At work, we have to wait until we're given the chance to speak before we can express ourselves; we keep our eyes glued to our tasks for fear of being hauled over the coals if we're late delivering them; we keep our ideas close to our chests for fear someone else will steal them; and we prefer to stick to what we know how to do, to ensure we get our end-of-year bonus. In short, our experience of life is quite different depending on whether it's Sunday or Monday, 8:59am or 9:01am.

Those who've been successful professionally have had to put in tremendous energy and hard work, regardless of their initial talent or potential. The reserve of energy we need to tap into to be successful at work is found in aligning what we do with who we are! When we try to play someone else's part and do things in a way that's unnatural to us, we have a limited amount of energy. Being successful becomes even more difficult, and we can forget about being fulfilled at work, because if we're not being ourselves, this will be impossible.

Faced with the problem of a lack of employee motivation, companies around the world are deploying a wealth of imagination and billions of dollars every year in an attempt to re-engage, re-motivate and satisfy them. According to the American polling organization Gallup, 'actively disengaged employees cost the U.S. $450 billion to $550 billion in lost productivity per year'.[12] But companies are making a mistake in launching numerous initiatives to motivate their troops without changing the way they operate, which is the root cause of this disengagement.

There's one sure 'secret formula' that would allow companies to be successful and those of us who work there to thrive: allow us to behave naturally and be ourselves! Instead of waiting for business

12. https://news.gallup.com/businessjournal/162953/tackle-employees-stagnating-engagement.aspx (accessed May 2019).

leaders around the world to wake up to this need, we can initiate change by and for ourselves by developing a new relationship to the company and behaving differently. And this is entirely within our abilities.

<p style="text-align:center">*</p>

Being yourself

<p style="text-align:center">It's cool to go places where working people are happy.
Neil Young, musician</p>

Today, large companies are seeking out some of the smallest ones in San Francisco, Berlin and Paris. They're studying the lifestyle of these curiosities we call startups. One of the things corporate services directors are swooning over is their furniture: it feels like something you'd expect to find at home rather than in an office. HR directors are also amazed at the flexible working hours: people seem to be coming and going pretty much as they please, deciding for themselves when to turn up at the office, which is far from systematic. And the office doesn't look like an office at all, but more like a large, rather untidy apartment: people are writing on the walls, in the middle of a sea of post-it notes, holding meetings in the kitchen, playing video games, organizing crypto-lunches to debate the latest crypto-currency to invest in. As for IT directors, they're surprised at–and somewhat scared by–the applications being used for work, which look nothing like those they provide their employees with. Managers are stunned to discover that anyone can go and see anyone, without seeking validation from their supervisor; they can even go and talk to the startup's founder, who doesn't even have an office.

If the furniture makes you feel at home, it's precisely because it's probably come from the home of one or more of the startup members. They didn't go bargain-hunting, they simply brought stuff in from home because they didn't have the money to buy new

furniture. The challenge for any company starting out is to make do with what they have, just like we do in our personal lives when we move into a new home.

It's not that people working in startups have decided to revolutionize working hours; they simply go to work when they wake up. Many of them will have been working all night, inspired by an idea–or they may simply have been out partying. More prosaically, people come to work when they feel like it, understanding their own biorhythm and knowing when they're productive and when they're not. They don't feel compelled to be in the office or subjected to fixed working hours. But they do want to succeed in getting their business off the ground! And that's probably the most important thing.

As for playing video games or organizing crypto-lunches, it's a much more natural, and much less costly way to create a social bond between team members than is organizing a team-building event, which those involved generally find boring.

Those working in this type of organization don't have to fill out a form to be signed by their line manager in order to meet with someone higher up the ladder, because the very notion of hierarchy has been done away with. When they need to talk to someone–to get information, put an idea to the test or for any other reason–they go and talk to them, even if it's the founder of the company, without having to ask anyone, let alone their line manager, for anything. In a world where it's possible for us to address the President or our favourite singer on Twitter, why shouldn't we be able to speak directly to Joe Bloggs/Blow in accounting? How does having to wait a month and get numerous validations before being able to obtain information equate with optimal productivity? It's not only counter-productive, it's also extremely demotivating.

Such a world is exquisitely exaggerated and cruelly depicted in *Brazil*. The bureaucratic and extremely unwelcoming environment of the Ministry of Information prevents anyone from carrying out any task without first referring to their superior and filling in a multitude of forms, of various colours. This creates a disempowered and

totally disengaged workforce. Workers seem more motivated to hide from their superior (the terrible and pathetic Mr Kurtzmann, played by Ian Holmes) so they can watch black-and-white films on their mini-screens. As for Mr Kurtzmann, he seems exasperated by all the paperwork, which he willingly entrusts to the hero, Sam Lowry (played by Jonathan Pryce). One of the funniest scenes in the film shows an independent heating specialist, Harry Tuttle (Robert De Niro), explaining to Sam, who has a problem with his air condi-tioning, that he chose self-employment because he was fed up with having to fill out Form 27B/6 imposed by 'Central Services', the official body responsible for repairing the air-conditioning units. Any resemblance to people who have left companies because of excessive paperwork is purely coincidental.

Startups, while they may be far from perfect, have a great advan-tage in that they don't feel obliged to recreate these very restrictive environments with their hundreds of out-dated rules and ways of doing things under the pretext that this is work. Probably because working in a startup is not synonymous with 'suffering' but rather with 'achievement' and sometimes even 'self-fulfilment'. And there's no need to shed our natural behaviour for this. Judging by the number of people leaving so-called traditional companies to join these young companies, despite the often-drastic pay cut that accompanies such change, this 'natural' seems to hold a real attraction!

The question, of course, is to identify how we can continue to be natural in environments where this is completely alien. Is leaving our only option? Or could it be possible to mould things to suit us? Could we not make changes, suggestions and adjustments that, even though small, would improve our daily life? If this seems too anecdotal for our liking, there are also other ways in which we can improve our working conditions and find fulfilment at work, including learning to seize opportunities when they arise.

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Seizing opportunities

Your life is defined by its opportunities, even the ones you miss.
Benjamin Button, *The Curious Case of Benjamin Button*

Imagine going to a dinner party where the hosts dictate which topics can be discussed, who has the right to speak, when and about what, giving as a reason that you're eating in their home! That doesn't sound like much of an evening, does it?! We could transpose this unpleasant situation to any activity involving several people. Imagine going to the cinema or arranging to go on holiday with friends and deciding which film you're going to see or where you're going to go on holiday without asking any of the others. Of course, tastes vary from one person to another: those who love comedies will complain about the horror film we've made them sit through; those who love lazing on the beach will complain about having to climb a mountain. And we'll spend our evening or our holiday trying to convince our friends to enjoy themselves.

It's common sense, when organizing an activity involving several people, to ask everyone what they'd like to do. If one person chooses for all the others, the odds are slim to none that everyone–or even the majority–will be happy with the outcome. The same applies in a company. Rather than spending millions in attempting to improve our engagement, motivation and job satisfaction, companies would do better making a simple change: leave us free to choose the missions and projects we want to contribute to. That's the price to be paid for us to be doing our ideal job, which depends on us doing what interests us as well as what we're able to do. Unless our aspirations are taken into account, we're unlikely to either feel good about the company or grow professionally.

This means that companies need to make a number of changes. Firstly, they need to change their perspective from focusing on jobs and workstations to thinking about opportunities! The workstation,

linked to a particular job and a contract, made sense at a time when people went to work every day on an assembly line, where they performed fairly repetitive tasks (see the earlier example of *Modern Times*). Today, the probability of us doing only what's stipulated in our employment contract decreases each day as the variety of situations we face increases! Not to mention the fact that every time we're asked to stick to what's in our employment contract, we're deprived of any form of autonomy and initiative, reducing us to robot-like status, which is unlikely to increase our efficiency. For us to have the maximum impact within our company, the issue is not about us adapting to our job description, but rather the opposite!

We therefore need to consider the company as a place that offers lots of opportunities for involvement in a variety of projects, jobs and activities, and reintroduce a notion of flexibility into it. We shouldn't have to change jobs or leave the company if we feel like doing something else; we should be able to regularly switch from one opportunity to the next.

However, more and more people are leaving companies to become self-employed, with all the risks that leaving a known and comfortable situation entails. Many of us who choose to make such a decision do so because we're tired of wearing ourselves out working on projects that don't interest us and that we don't see the point of, for clients we don't always agree with and with colleagues whose culture we don't necessarily share. We leave the company to gain more freedom, because these days it's possible to offer our services with just a laptop, a smartphone and Internet access. Sometimes however the 'decision' is less positive: some go freelance because they're 'pushed out', one way or another; others, because there are really no prospects for them within the company.

Whichever way we look at this migratory trend, it's undeniable that a company's work is tending to be subdivided and that it's increasingly being organized around projects, activities and even tasks rather than actual jobs. It's also true that we all want to be able to choose which projects we're going to contribute to rather than having them imposed on us.

The American company W. L. Gore, which makes the Gore-Tex fabric, has understood this well. The company, which has about 8,000 employees, organizes an induction for new employees that's quite original. When a new person arrives, they're given a few weeks to discover the different projects to which they might be able to contribute. They have the chance to work alongside different teams to get a feel for how they work, who does what, why, and so on. At the end of this period, they can express their preferences for the projects they'd like to be involved in, and the teams working on these projects then vote to determine whether or not they agree to welcome this newcomer as part of their team. So, the question people who want to join W. L. Gore have to answer is no longer what will my job be? But rather, on what projects and with which team am I going to be able to work?

When companies are organized in such a way that each of us is free to contribute to projects that interest us, it's a safe bet that we'll feel more listened to and respected, that what we're doing will be more aligned with who we are, and that, as a consequence, we'll be much more fulfilled and productive.

A third element–in addition to being ourselves and seizing the opportunities that interest us–also contributes to our fulfilment: the work tools and resources that are put at our disposal. Perhaps, after all, the so-called 'bad workman' was right to blame his tools!

<p style="text-align:center">*</p>

Choosing your work tools

A good tool improves the way you work.
A great tool improves the way you think.
Jeff Duntemann, writer

When I was a child, I used to wait for my parents to come home from work to discover the latest innovations, because at that time, it was in companies that they would emerge. Today, it's the other way

around: parents wait for their children to come home from school to find out about the latest technological innovations.

Where once, its domain was the company, technology has now invaded our personal lives and inhabits our smartphones.

Our everyday lives have changed dramatically over the past 20 years, with the emergence of technologies such as the Internet, broadband and smartphones. To find the name of the artist whose song we loved on the radio, we no longer have to resort to trying to whistle the tune to our local record shop owner. Now–ta-da–we can find it instantly! Hitchhiking, like Jack Kerouac in *On the Road*, may have a nostalgic air of freedom about it, but BlaBlaCar now helps us organize carpooling much more efficiently and saves us having to wait for hours on the roadside. And we've not thought about shopping in the same way since the creation of Amazon. Not to mention our way of ordering food from home via Deliveroo or Uber Eats, chatting with friends via Messenger or WhatsApp or finding holiday accommodation via Airbnb, etc.

Strangely, despite this incredible deluge of applications of all kinds, everything is still complicated in companies: for the most part, these technological tools haven't even managed to cross the threshold. This is often for security reasons, but also because they can't be managed as so-called professional applications because moderators aren't welcome. And also because so many new apps are appearing every day that IT departments just don't have the time to study them all. So, when we want to create any sort of document on our computer, it first has to get past the onerous security rules imposed by the company. Then, when we decide to share it, we have to try our luck with the moderator of the company's 'home-grown' social network, who decides whether or not it complies with the network's policy guide-lines. And it's a social network whose only appeal is a nostalgic one as it seems to belong to another era. If our request to share is refused, we can ask our manager to ask their manager to ask their manager if they can intervene with the moderator! But then, of course, by the time the moderator finally caves in under pressure from a much more senior member of staff and agrees to publish our work, it'll be obsolete, given

how many months have passed. To cap it all, we're doing all this on laptops that haven't been seen for sale for years.

There's a sense of disappointment among those who've inspired by science fiction into hoping that the technological environment of companies would be a little different by now. Given that the first *Blade Runner* film was set in 2019, it would appear that we're somewhat behind the times. Our company car doesn't look much like Deckard's and it certainly doesn't fly. Meanwhile, those who dreamed of having a digital touch screen like Tom Cruise's in *Minority Report* have to try to console themselves with their Surface.[13] As for Tony Stark's office in *Iron Man*, it's as far removed from our work environment as the one in *Brazil*. Not to mention the fact that we don't have a virtual assistant like Jarvis, who seconds Tony Stark in his tasks–unless you count Siri or Alexa.[14]

We'll be able to console ourselves thanks to this libertarian development authorized by the company: the BYOD (Bring Your Own Device). The idea here is to leave each of us free to decide what equipment we want to work on. Some are more comfortable with their Mac than with the laptop their company provides. Others prefer to work on tablets. Others will choose to use their smartphone rather than an old phone supplied by the company.

This creates a real headache for IT departments because of all the security issues involved. But it's the price that needs to be paid if we're to feel good about the devices we use all day long and that greatly affect our experience of work. The same thing is true for applications. Rather than preventing us from managing our tasks with Trello and forcing us to use the company's chosen tool (which may or may not have been developed in-house), why not let each of us manage our work as we see fit?

Allowing us this much freedom inevitably creates a kind of Tower of Babel in the company, because when we want to share something with someone, that person may not use the same application as us.

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13. Microsoft's touchscreen tablet, which is used quite a lot in business.
14. The virtual assistants offered by Apple and Amazon respectively.

This means that to ensure that collaboration runs smoothly, each team, department or service needs to agree on the best way to work together. This remains at the discretion of each team and prevents everyone having to bear the brunt of constraints from the top that turn work into a heap of obligations rather than opportunities.

Slight disadvantages aside, such a change is well worth making because of the pleasure to be had from working with tools we like and are used to using, which improves our whole work experience considerably. This, combined with the ability to be ourselves and seize opportunities to contribute to projects we want to be involved in, can really help us thrive at work. The company can thus provide a real opportunity for us to move towards our ideal work, within a community of people driven by the same desire.

The three elements described here are all concerned with our ability to influence the way that companies generally operate. But there's a skill for which we're solely responsible and that can also play a determining role in our fulfilment and that is our ability to create our own 'playing field'.[15]

The Actors Studio Method

CREATING YOUR OWN PLAYING FIELD

We can always do more than we think we can.

Joseph Kessel, novelist

What's fun about a new company is that everyone deals with everything, all the time. Firstly, because the number of things that need doing far exceeds the number of people that are available to do them. It's an environment where we do what needs to be done, without asking ourselves whose job it's supposed to be. Secondly,

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15. By which I mean, here, a virtual place where we can create our own tasks and missions.

because roles are not clearly defined, because that's unnecessary. According to Yuval Noah Harari, the author of *Sapiens*, in a community of less than 150 people, coordinating members happens almost naturally. Above this symbolic number, the company's procedural toll increases because it has to divide up, prioritize and organize the work so that everyone knows what they're doing, which doesn't happen naturally.

This is generally the point at which we begin to hear comments like 'it was better before', and where we feel less free to do what we want in the way we want to do it. Things become a bit more organized, but also a lot more rigid, and eventually everyone becomes less efficient, spending more time trying to find out what they should be doing rather than actually doing it.

The good news is that regardless of the size, age and type of organization, it's always possible for us to have an impact on our work environment. In all cases, whether the company has 100 or 100,000 employees, each of us works with only a limited number of people. This means, then, that each of us can have a local impact! Books like Frédéric Laloux's *Reinventing Organizations: A Guide to Creating Organizations Inspired by the Next Stage of Human Consciousness*, show that any change in a company ultimately comes from local initiatives, which are observed by managers and directors who then decide to extend this initiative to the rest of the company. So, each of us, as Joseph Kessel says, can do much more than we think we can.

The famous Actors Studio Method, followed by Marlon Brando, Julianne Moore, Robert De Niro and Michelle Pfeiffer, among others, is based entirely on the idea that each actor needs to find the 'truth' of their role by drawing on their experience, emotions, psyche–in short, on everything that constitutes their singularity! In other words, they need to align their role with who they are, which will allow them to transform their character in a unique way, so that it's unlike any other. The many anecdotes that relate how a single actor has transformed a scene are particularly significant: we might think that actors are limited to following a script, but that's often far from being the case.

Each of us can modify our 'lines' to adapt them to our ambitions and the way we work, while respecting the 'scenario', of course.

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Making your mark

There are three ways of doing things around here: the right way,
the wrong way, and the way that I do it.
Sam 'Ace' Rothstein, casino manager, *Casino*

Starting a new job is like moving house. When we're given the keys to our new house or apartment, we don't usually move straight in and immediately adopt the decorative scheme and kitchen and bathroom furniture left by the previous owners or tenants. Often, the first thing we'll do is redecorate, even if the place has been left clean, just so we feel at home. It's part of the process of making the place our own. If we've bought the place, we may even go as far as changing the configuration, installing the kitchen in the living room and turning the old kitchen into a bathroom, for example. We're 'making our mark'.

Heath Ledger, a true product of the Actors Studio, applied this process well in his portrayal of the Joker in *The Dark Knight*, the second episode of the *Batman* trilogy by Christopher Nolan. (He received numerous awards, including a posthumous Oscar, for the role, which had a powerful impact on the film). In the scene at the police station, when the Mayor announces that he's promoting James Gordon (Gary Oldman) to the rank of Commissioner to congratulate him on the arrest of the Joker, it was planned in the script that all the officers present would applaud, and that the Joker would remain passively sitting in his cage. But Ledger decided to improvise and started applauding too, but his face is devoid of emotion, which creates a feeling of unease and adds a strong sense of tension to the scene. The result is quite terrifying.

Leonardo DiCaprio, another method actor, is a regular improviser, often creating the unexpected and adding another dimension to his films. In *Django Unchained* by Quentin Tarantino, there's a very tense scene where he's screaming at the people around the table. Standing up, he violently smashes his hand down on the table and breaks a glass. A few seconds later, we see him looking at his now-bloody hand and trying to remove the small pieces of glass embedded in it, before resuming his tirade with even more intensity. This wasn't in the script. He decided to hit the table, and he hurt himself in the process. Rather than stop the filming when he realized he was injured, as many actors would've done, he used his injury to raise the tension of the scene and assert his will on those around him, who now look even more unnerved. DiCaprio is known for his professionalism and his ability to put his all into his acting: it's his way of putting his signature to a role.

Just as a script tells the actors what the director expects of them, so there are processes and other organizational measures to show us how the company functions as a whole. But, like actors, there's nothing to prevent us from making a role our own and doing things our way, provided we achieve what we need to.

At one time, film-makers even went looking for actors like Fred Astaire, Humphrey Bogart, Bette Davis for who they were. It was them they wanted to see in front of the camera, no one else, because of the unique way in which they made each role completely their own. And they were able to do so because of their background, their history, their physique–everything that made them unique. Yet some such actors struggled for years before becoming famous, for the same reasons that eventually made them stars.

These famous faces of the cinema of the past are like the so-called 'atypical' profiles of today: recruiters are reluctant to hire them because of their singularity, but once in the company, they can work wonders, precisely due to this singularity. Those of us who don't match the traditional candidate profile (a university degree, previous work experience for a known company, or whatever) would be considered atypical. Hiring a person with an original profile, who

hasn't followed a career path recognized by the labour market or required for a particular job, is always perceived as a risk by the recruiter because, as one of them said to me, 'If I hire someone with an MBA, no one will ever blame me, even if they turn out to be very inefficient. They'll just say 'well, that's extraordinary'. On the other hand, if a person with a more atypical profile does a poor job, the immediate reaction will be: 'Well of course, what made you hire him or her?'' This is especially true because, in general, people are quick to blame us when we make a mistake, but we're rarely congratulated when we're successful.

Atypical simply means different from normal. And as the fictional character Morticia Addams recalls in the TV and film series The Addams Family: 'Normal is an illusion. What is normal for the spider is chaos for the fly'. There's a good chance that, given the evolution of the labour market, today's atypical profiles may be the star profiles of tomorrow. If differentiating themselves from the competition is a key factor for success for companies, how can they hope to achieve this if all their employees have received the same education, followed the same career path and think in the same way? Only those who are able to make their mark on the projects they're involved with will truly add value to their work. This idea is promoted by Adam Grant in his book *Originals: How Non-Conformists Move the World*.

In short, the era in which we live is more open than ever before to to welcoming our singularity. With that said, it remains our responsibility to try to assert, if not impose, what makes us unique, in order to give ourselves every opportunity to make our own way in the company rather than have another way imposed on us by others. To achieve this, we also need to know how to make the right choices day by day, or more accurately, how to choose our battles.

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Choosing your battles

Half the victory is about choosing your battle,
the other half is about timing.
Jacques Deval, fim director

Heat, which pits a bank robber, Neil McCauley (Robert De Niro), and his gang against an ace cop, Lt. Vincent Hannah (Al Pacino), magnificently illustrates the importance of choosing your battles well. At the end of the film (spoiler alert: if you've not seen it, skip directly to the next paragraph!), McCauley heads to the airport with his fiancée and the money from his last heist. The police have lost their trail–they're free! While they're on their way, one of his friends informs him that the 'mole' who grassed them up–and almost sabotaged the heist–has been located, but reminds him that he's got better things to do now than settle his account with a traitor. Unfortunately, McCauley, who's steeped in 'principles' and the gangsters' code of honour, decides to make a small detour to take care of his former colleague. This small detour enables Hannah to track him down again and finally kill him. McCauley was about to fly off to a peaceful life with his fiancée, but he gave it all up by choosing his battle unwisely.

While our lives are probably less gripping, they're nevertheless strewn with problems that daily demand our attention. How successfully we negotiate each day will depend largely on the battles we decide to engage in, or not.

Some days, I get called on to 'fight' on numerous fronts:

–a client tells me they're not satisfied
–another would like to meet up with me that day to tell me about a new opportunity
–an employee is threatening to resign
–another seems anxious, but I don't know why

–a third behaved badly in a meeting and caused a conflict within
his team
–my associates would like us to meet up during the day to review
the situation …

The battles to be waged daily in our work life are like e-mails: we can remain immobilized by our inbox, trying to treat emails as they arrive, but new ones just keep coming. Almost without us realizing it, we can find ourselves spending all our time dealing with this constant flow, until there's no chance of us actually deciding what we want to do with our day.

To regain control and make decisions about our work life–in the short, medium and long term–we need to choose rather than suffer! We can choose which e-mails to deal with or not, when and where to read them, etc. It's the same for all our 'battles', whether it's a one-off problem or an important decision that will affect our future. Trying to deal with everything at once will have an impact on our daily life and will give us no room to manoeuvre. It's up to us to decide on the issues that affect us and to understand which ones are in our own sphere rather than those of our neighbours.

To go back to the example of my day, my choices will vary depending on whether my priority is to make sure the work atmosphere is good or to gain new clients. In the first case, I'll choose to focus on the personal and relational problems (the employee who's threatening to resign, the one who seems anxious or the one who caused conflict during a meeting). In the second case, I'll choose to focus on situations involving a client (the one who called me to express his dissatisfaction or the one who wants to tell me about a new opportunity).

Once again, actors show that the choices we make daily can affect our entire career without us even noticing. Tom Selleck turned down the lead role in *Raiders of the Lost Ark* when Steven Spielberg proposed it to him, thinking that the series he was working on–*Magnum, P.I.*–would serve his career better than what looked like a rather bizarre project. In hindsight, that was perhaps not the right decision! We might say he had no choice, because he was committed

to the series, or that he was probably right to stay put (the series was enjoying great success at the time)–a bird in the hand, as it were.

When we look at George Clooney's career, on the other hand, we recognize that he was right to end his involvement in *ER*, the successful series that made him a star, to devote himself to cinema. His first film, *From Dusk till Dawn*, directed by Robert Rodriguez and written by Quentin Tarantino, was quite a risky choice, but in fact, it allowed him to break out of the mould of being just a 'pretty face', which could've limited him.

Other good-looking actors, such as Brad Pitt and Leonardo DiCaprio, have had to face similar battles. After gaining wider recognition in a very short scene in *Thelma and Louise*, Brad Pitt decided to branch out with *Seven* and *12 Monkeys*, neither of which really show off his physique. Rather than taking the easy route and accepting the sort of superficial romantic comedies that were being offered to him following the success of *Titanic*, DiCaprio chose more demanding directors and scripts (*Gangs of New York*, *Shutter Island*, *Inception*, etc.), which led to several Oscar nominations and finally to winning one for *The Revenant.*

We all have the chance, at our own level, to make choices between the options offered to us within the company. Our choices will take us either closer to our ideal job or further away from it. It's our responsibility to decide which are the right choices, even if they seem riskier than a more usual course of action or the choices made by others.

Beyond trying to assert our singularity and choose our battles, there's a third, extremely effective way to create our playing field in business: speaking in public. Why is this so important? And how can we pass with flying colours what seems, for many of us, like an insurmountable test?

Speaking in public

Better a fearful man who embraces his fear
than a brave man who wastes his courage.
Frédéric Dard, novelist

From *Braveheart* to *The Wolf of Wall Street* via *Game of Thrones* and *The King's Speech*, countless films show that speaking in public can change a destiny. In our case, speaking in public is often less grandiloquent: on a more modest scale, it's likely to be about presenting the ideas contained in a PowerPoint, or perhaps speaking from a stage to a hushed auditorium. Nevertheless, whether speaking in a meeting room with a PowerPoint or while wielding an axe on a battlefield, the challenge remains the same: to be convincing! To convince our listeners means marking our territory, promoting our ideas, asserting our singularity, our style, and advancing our projects by rallying our audience to our cause. Public speaking is an extremely powerful tool.

The problem is that this exercise is one of the most dreaded in the world! Jerry Seinfeld jokes about it in these terms: 'According to most studies, people's number one fear is public speaking. Number two is death. Death is number two. Does that sound right? This means to the average person, if you go to a funeral, you're better off in the casket than doing the eulogy.'

The famous film director Michael Bay, responsible for such hits as *Bad Boys*, *Armageddon* and *Transformers*, despite being used to shouting out directions to hundreds of extras on gigantic film sets, has proved that public speaking can be a daunting exercise. On stage at a large trade show, he had to reply to the CEO of Samsung to extol the merits of their latest innovation. When he arrived on stage, rubbing his hands together, it was evident that he felt uncomfortable, but he quickly began speaking. After a few seconds, he was clearly hesitating. He admitted that the teleprompter wasn't working. The other speaker tried to redeem the situation by getting him to talk

about his work, a subject he obviously knows perfectly well, but he seemed paralyzed. Moments later, he left the scene completely unexpectedly, after stammering a vague excuse.

How could a director who's been working for decades in the industry have trouble expressing himself in public about his area of expertise? There could be very simple reasons for this:

–however talented someone may be, doing a job and knowing how to talk about it require very different skills

–some people are unable to improvise the slightest response to an audience; the only way they can handle their stress is to 'recite' a pre-prepared text

–coping with an unexpected event (like a teleprompter malfunctioning) is often problematic, but when you're on stage, it can become downright crippling.

Although Michael Bay is used to managing the host of unforeseen events that can occur on a shoot, he remains affected by the universal fear of looking foolish! This fear is one of the main reasons we're so afraid of speaking in public. Perhaps it goes back to childhood, when the teacher would call us to the front when we hadn't done our homework! Whatever the reasons, speaking in front of our peers to express our ideas or emotions is a moment many of us fear.

Unlike when we were at school, if we find ourselves speaking in public, it's not a coincidence (except in very exceptional cases). More likely, it's because we're the best person to express ourselves, at that given moment, on that particular subject. Which means that we master the subject. Therefore, unless we suddenly lose the power of speech or an entire section of our knowledge the night before we're due to speak, there's absolutely no reason why others would find us ridiculous, quite the opposite.

To succeed in public speaking, we need to play it down and see it as no more complicated than cooking. The first thing we need to know is who we're going to cook for. Then, we need to check whether our guests have any food allergies, and what their tastes and

preferences are. It's the same with public speaking: what we 'cook' will vary depending on whether we're addressing an audience of experts or dealing with an uncultured mob!

Next, we need to remember that addressing people in a presentation is about conveying one message, not ten. The way we convey this message also needs to be in keeping with who we are and our way of doing things. All great chefs have their signature dish, their recipes, their favourite ingredients and their unique way of working them. Our ingredients are our examples, our illustrations, our anecdotes, our tastes and our experiences–all things that belong uniquely to us. When what we have to say comes from who we are, it seems truer and people are more affected by it (which is in line with the Actors Studio method).

Another key to success lies in the fundamental element of generosity! Just as we cook to please others, not just ourselves, when we take the floor to convey a message, our focus is on others, not on ourselves. The desire to share what we have to say must be stronger than our concern with the image we're about to convey. Keeping this in mind greatly reduces stress.

Finally, of course, we need to pull off our meal well, despite any unforeseen events that may occur: a forgotten ingredient, a trick question, a dish left too long in the oven, a PowerPoint presentation that goes wrong, etc. Not feeding your guests is as unthinkable as stopping in the middle of a presentation. As the famous expression from the world of entertainment says, 'the show must go on'. Rather than fear mishaps–which in any case won't stop them happening–why not use them to help convey the message.

How we put across our ideas is as important as the ideas themselves, because it communicates something about us and provides an opportunity to express our singularity.

It's thus possible for all of us, within our means, to create a playing field at work where we feel good and that will help support our personal project, in keeping with the company's goals. There is, however, a flaw in this seemingly perfect picture, and that is that the playing field of someone who's 20 years old won't be the

same as that of someone of 60. Every day we witness, sometimes dumbfounded, the incomprehension that can exist between members of different generations. This lack of understanding can, of course, be overcome. The issue we need to address is how we can help these different playing fields coexist, or even enhance each other.

The Cédric Klapisch method

BENEFITTING FROM GENERATIONAL DIVERSITY

If you're still a seeker, you're not old! People who really are old are no longer seeking, they're just waiting to die.
Henri Salvador, singer

The company is facing the challenge of the new generations. This is the subject of so many lectures, articles and books that anyone would think the members of these generations had three arms and two heads! Yet, a lot is said about generations Y (the digital natives) and Z (the digital intuitives). To summarize, they have the reputation of being unmanageable in business and untenable in the job market. Generation Y includes all those born between 1980 and 1994, while those born after 1994 belong to Generation Z.

Fortunately, a new generation has recently been identified (for those who didn't feel they fit into the archetype of Gen X [the cohort that succeeds the Baby Boomers], but who were too old to claim Generation Y): Xennials, a micro-generation born between 1977 and 1983. This is the generation of *Star Wars*, of those who haven't missed a single episode of *Friends*, who saw the advent of the Internet and mobile phones, who want everything, but for whom nothing is easy.

Many films by Cédric Klapisch, from *Good Old Daze* (*Le Péril jeune*) to *Maybe* (*Peut-Être*) via the *Pot Luck* (*L'Auberge espagnole*)

trilogy, *Russian Dolls* (*Les Poupées russes*) and *Chinese Puzzle* (*Casse-Tête chinois*), deal with the issue of generations, depicting the difficulty of growing up and integrating into adult life, with all the responsibilities that entails. *Maybe* is probably the most interesting of them all. The action is set mainly in 2070, in a futuristic Paris. In the film's clever story, a young man, Arthur (Romain Duris), finds himself with his son, Ako (Jean-Paul Belmondo), who also happens to be a grandfather–at the very moment that Arthur's planning to have a child with his girlfriend. Through the adventures of the two men, this science-fiction film effectively encapsulates the many issues that arise when we're growing up (or getting older) and all the archetypes regarding generational clashes: different ways of thinking, of talking, of making decisions, etc. These issues and confrontations are not the preserve of one particular generation, they're the lot of every generation! They're simply revealed in the light of different eras, each era having its own codes, customs, cultural and technological references, doubts, apprehensions, etc. The rest is merely a matter of education.

For the past 10 years and more, I've been working in a company where employees are between 20 and 60 years old, with an average age of 33. Some of the Generation-Y employees have been there for almost ten years. It's difficult to conclude from this that the new generations are not loyal to their companies. Anyone of any generation may decide to stay in the same company for a long time, provided they feel good there. But the company needs to care about their well-being.

Therefore, rather than focusing on the so-called characteristics of this or that generation, it would be more useful to analyse the times in which we're living and try to discover how they really differ from those in which older generations grew up.

Reclaiming power

If someone calls you an amateur, remind them that it was amateurs
who built Noah's Ark and professionals who built the Titanic.
We know the rest ... Believe in yourself.
Morgan Freeman, actor

In the 20th century, those who were making music and wanted to become famous, had to do the rounds of record companies in the hope that an artistic director would listen to their demos and love them.[16] At that time, record producers and radio programmers virtually had the power to decide whether an artist would live or die. Without their support, an artist's songs would not be produced, distributed or broadcast on the radio. The rest depended, as it does today, on the public.

In 2003, a small revolution was created: MySpace. This social network allowed musicians to promote their compositions by publishing them as they wished. Some titles were listened to tens of thousands of times. Then, between 2004 and 2007, came Facebook, YouTube, Spotify, Deezer and Soundcloud, sounding the death knell for MySpace. Meanwhile, iTunes was creating its own small revolution. Within a few years, the monopoly that had been held by record companies for decades was completely overturned. Today, artists can promote their work without needing anyone's approval. It's what Seth Godin calls the 'Pro-Am revolution'. Today, the likes of Justin Bieber and Lana Del Rey might still be unknowns had their videos been less successful on YouTube, where they were spotted by professionals.

And this is just the music world; in fact, a similar phenomenon has occurred, or is occurring, in almost all areas of life. When we think

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16. A demo is a song or group of, usually four or five, songs that are recorded with the means available, that should make the producer want to hear more, and ideally, sign the artist and produce their album.

that in the space of just a few years, each of us has been able to take back all or part of the power that had been in the hands of professional organizations for many years, it's difficult to conceive why this hasn't had more of an impact on the company. Now that you can become famous by making videos in your room (like PewDiePie, Ryan Higa or Jenna Marbles), having to ask permission before taking any sort of initiative in a company quickly becomes intolerable, not to say unthinkable! It's intolerable to feel we're not getting anywhere because we're having to follow a chain of command, when no one in the company even remembers why these chains were created in the first place. Our parents and grandparents lived with the sense that this was just how things were, that this was part of working in a company and that it was, in a way, normal. But when, in everyday life, we've experienced the changes that technology has brought about, the 'normal' soon seems ridiculous and highly inefficient.

The only difference between Generation X and later generations is that Gen-Xers have experienced these ways of functioning that today seem so ridiculous and inefficient and have become somewhat used to them. They want to do things differently, but they accept that effecting change within a company takes time. Generation Y and Z members are not necessarily uncooperative, they just haven't known earlier times. So, they feel free to question customs and practices that seem to them to have no foundation. That doesn't mean they're arrogant; they're just reasonable people trying to understand. The uncomfortable thing about members of this generation is that no one can explain to them why waiting three months to validate an idea is efficient! All that we can tell them is, 'That's just how it is', whether or not we ourselves are convinced by the validity of this reply. If there's one thing the company can no longer tolerate, on the other hand, it's the disengagement engendered by this type of response. And this disengagement is unfortunately transgenerational.

There's another phenomenon that leads to different expectations within the company: the 'glamourization' of startups.

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Startups are the new sexy

There's something very sexy about freedom.
Anggun, singer

When I started my first business in 2001, after receiving my PhD, I earned just 800 euros a month, whereas my fellow graduates were getting hired for jobs with salaries three to four times higher. It was hard to convince my parents, who'd made huge sacrifices to enable me to pursue my studies, that I knew what I was doing and that I wasn't totally insane. My choices were incomprehensible to them. For them, security would've been getting hired by a big company paying a good salary on a fixed contract.

On evenings out, when I would explain my situation–that I was having to work weekends, that I wasn't earning much money and that, no, I wasn't planning to get a good job working for a company–people thought I was pretty uncool! Station F didn't exist,[17] VCs (venture capitalists) were not yet well established, and no one had really mastered the vocabulary of 'seeds', 'scales' and other such barbarisms. And yet, I had the chance to start my business using a computer and what passed at the time for Internet connection. Such was not the case for those of my parents' generation, for whom setting up a business was a much more complicated affair that required substantially higher investment from the outset because of all the basic materials needed.

Seventeen years on, when young people graduate from business school, looking to get hired by a big company is seen as a more uncertain option than trying to start up their own business, especially given the less-than-agreeable state of the job market. The popular people at parties are those wearing hoodies who are relating how

17. The business incubator for startups, founded in Paris in 2017 by Xavier Niel (see also chapter 1), is the largest establishment of its kind in the world.

they're being 'incubated' and that they're planning a B series. In short, being a 'startupper' is the sure way to be seen as successful in society. You immediately look cool. In the first decade of the century, you had to participate in a reality-TV show to hope to become famous or have your own TV show. Now, you need to be a startupper to find yourself on the cover of *GQ* and other glamorous magazines.

Yes, I admit it, I'm exaggerating somewhat, but not all that much, as evidenced by the transition, in the course of eight years, from *The IT Crowd* (first broadcast in 2006) to *Big Bang Theory* (from 2007) to *Silicon Valley* (premiered 2014). In the first series, the lives of the 'geeks' are nothing to envy and they're certainly not cool. It's a case of 'geeks are geeky'. In the second, geeks are starting to be endearing, girls are getting interested, while those working for corporates are beginning to seem a bit old and fusty–'geek is the new cool'. In the third of these series, the 'rockstarization' of geeks and startuppers is well underway: here, being a startupper is the new sexy.

The reality, however, is often quite different. For every startup that manages to be successful and ensure a more or less secure future for those working there, many go under within 18 months. And not all startuppers are cool–far from it. On more than one occasion, I've come across tyrants in their twenties, with an almost diabolical reputation, who were even harsher and more uncompromising with those working for them (they called them employees rather than colleagues or collaborators) than some managers of major companies. As for earning a quarter or a fifth of what you could earn doing the same job in a more established medium-sized or large company, sure, this may indicate a certain tenacity, but I'm not sure it's particularly cool.

Be that as it may, it's clear that, having been raised with the delusion that startups are glamourous, members of the younger generations are threatening to leave companies at the slightest discontent, believing that companies are limiting their freedom, their creativity and the high probability that they could make a fortune with one or two good ideas. This belief–whether delusional or reasonable–makes the task of managers much more difficult.

Their response, and that of business leaders, then, is intrapreneurship, in other words providing the opportunity, to those who want it, to become entrepreneurs within the company. This gives employees the chance to satisfy their desire to be creative, while enabling managers to retain talented individuals whose innovation will benefit the company. Here again, it's often members of the Y and Z generations who are the keenest to take up such opportunities. It's not that they're necessarily more talented or more creative than their elders, simply that they're more comfortable with this idea of intrapreneurship, because they've grown up in an environment where they were encouraged to believe that it's possible for everyone.

Once again, the ability to unlearn is key to eradicating generational differences and enabling everyone to benefit from the opportunities offered. The times we're living in also seem to be conducive to another type of search: the quest for meaning.

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Seeking meaning

It's never too late to be what you might have been.
George Eliot, novelist

For a whole host of reasons, the search for meaning is something that's on all our minds, regardless of what generation we belong to. We're seeking a better balance between our work and our private life. We're trying to take better care of our bodies, as evidenced by the recent boom in the number of health, fitness and well-being magazines. Just 20 years ago, if you'd said you practised meditation, you would've been suspected of being part of a sect. Today, if you don't meditate, you're considered a low-minded materialist. In the last 30 years, we've moved from the cult 1980s film *Wall Street*, the ultimate celebration of money, to films like *A Quest for Meaning*. Is this because we've realized that the planet is under threat because of all our excesses? Because it's becoming harder and harder to eat

food that's not been contaminated by some pesticide or antibiotic? Or because clean air is becoming scarcer?

Whatever the reason, the fact remains that we're paying more attention to how we're 'consuming' our lives. In this context, we're no longer prepared to work ourselves to death, unless we see some sense in what we're doing. And most importantly, unless it contributes in some way to our life goals. Yes, making money from work remains a key concern for most of us. However, our choice of work–for those of us lucky enough to have the opportunity to choose–will not depend entirely on that. We're looking for work that has some meaning.

This quest for meaning is also expressed through the growing importance given to corporate social responsibility (CSR). In their CSR choices, companies can demonstrate their commitment to align their activities with their values and with ethical, social and environmental concerns. Increasingly, clients and candidates (when they have the choice) are paying attention to a company's CSR policy before choosing with or for whom they'll work.

This desire for our activities in general, and for our work in particular, to be more meaningful is not restricted to members of Generation Y or Z. The difference in behaviour between members of different generations in this respect relates to only one very simple, and ridiculously obvious, factor: the responsibilities that the work entails, or doesn't!

Someone in their twenties can easily pack in their job overnight to choose to do one of the following:

–go travelling around the world for a year with just a backpack
–realize a childhood dream to become a cheese maker, a carpenter, a musician or a photographer (see the notion of 'switching' described in the previous chapter)
–return to studying
–go abroad and take odd jobs to discover another way of life, etc.

This type of change of direction is becoming increasingly common. I know many people from generations Y and Z who've made such

choices (especially travelling around the world for a year). I also have friends aged between 40 and 55 who would like to make similar choices. They may be Generation X, but this quest for meaning is whispering loudly in their ears, too. *The Secret Life of Walter Mitty*, directed by and starring Ben Stiller, is about this type of quest. It depicts a 40-year-old who embarks on incredible adventures–we're never clear whether they're real or imaginary–to breathe new life into his dull existence.

Gen-Xers seem less inclined to make this type of choice simply because, in most cases, they have a mortgage to pay and need to earn enough money to support their families and even pay for their children's education. Of course, they too, want to get up in the morning knowing why they're going to work. But, when the choice is between this quest for meaning and assuring their children's future, the answer is clear even before they dare ask themselves the question. Others manage to take the plunge and take a 'leap into the unknown'. There are no rules, only good questions we can ask ourselves and answers to look for within ourselves and around us.

In fact, managers more often find themselves confronting this type of decision to leave everything with members of Generation Y or Z, who are freer. The phenomenon is not specifically linked to the 'DNA' of this generation, but simply to the fact that they're freer, being still too young to be weighed down by responsibilities. Gen-Xers and Baby Boomers also knew freedom in their youth. But, at that time, they felt less empowered to take advantage of it. The world seemed bigger, they weren't connected with the whole planet, there was no YouTube to give them (the illusion of having?) the power to embark on any career or learn online, etc.

Beyond the characteristics of this or that generation, the essential thing for every individual, and for the company itself, is to be able to benefit from this diversity, which is a source of innovation and creativity! This idea is developed in the book *The Rainforest: The Secret to Building the Next Silicon Valley*, which states that innovation can only come from the variety of species (hence the metaphor of

the old-growth forest) and the friction between people who think differently. Hence Matt Ridley's description of innovation as 'ideas having sex'.[18]

Rather than fearing it, we need to encourage this diversity, generational or otherwise, and cultivate the differences within companies as opportunities to see the emergence of new solutions to new problems. Whether or not we thrive in a company will depend on other fundamental factors relating to our experience of work, including the relationship between managers and the people they manage.

The *Suits* method

MANAGING AND BEING MANAGED

*The best executive is one who has sense enough to pick good people
to do what he wants done, and self-restraint enough to keep
from meddling with them while they do it.*
Theodore Roosevelt, politician

A popular maxim in the business world claims that employees join companies but leave managers, underlining the important influence that the relationship we establish with our manager has on our experience of work. In the area of talent management, it's customary to say that the four pillars of a good experience of work are:

–the salary
–the work environment
–the projects we get to work on
–the relationship with our manager

18. To hear his Ted Talk on this subject: https://www.ted.com/talks/matt_ridley_when_ideas_have_sex.htmlPitfalls/discussion#t-92310 (accessed May 2019).

In short, everything suggests that the manager–managee relationship is central to our work life. Numerous films illustrate the varying management styles in existence: authoritarian, Miranda Priestly (*The Devil Wears Prada*); manipulative, Frank Underwood (*House of Cards*); decision making, Ellen Ripley (*Alien*); relational, Sam Lion (*Itinerary of a Spoiled Child / Itinéraire d'un enfant gâté*); committed, Princess Leia (*Star Wars*); paternalistic, Vittorio Manalese (*The Sicilian Clan / Le Clan des Siciliens*); cool, John 'Hannibal' Smith (*The A-Team*).

What we're concerned with here is not explaining how to be a good manager or a good employee, but rather understanding how to establish a good relationship between the two! As in any relationship–between friends, family members or lovers–we need to be able to reach an agreement. And as is the case with any relationship, everyone has their share of responsibility when it comes to making it a harmonious one or not.

When we're being managed, we too often–all of us–tend to 'suffer' the relationship, as though we were powerless against the management style we're confronted with. This isn't true. It's essential that we explain to our manager how we work, why we joined the company and took on the job, what our ideal vision of work is, how we plan to achieve it, and so on. Our ability to pursue our personal quest and to thrive at work depends on this relationship.

For those of us who are managers, it's equally essential that we share the objectives we've been given with each person we manage, explaining how we view the relationship and what we expect from them. We also need to listen to others and hear their hopes; indeed, their ability to deliver the expected results will depend on our ability to adapt to the way in which they work and their expectations.

Ultimately, it's about finding a good balance between how each person contributes to the company's objectives, and how the company allows individuals to pursue their own goals.

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Getting to know each other

The grandeur of a profession is … above all, uniting men:
there is only one true luxury, that of human relationships.
Antoine de Saint-Exupéry, writer

In *Suits*, set in a large New York law firm, we follow the adventures of Harvey Specter, the firm's top lawyer, and Mike Ross, a young lawyer that Harvey has taken under his wing. As is often the case, the first episode sets the scene for the rest of the series and for the tenor of their relationship. During a recruitment interview that's unusual, to say the least (Mike has found himself in the interview to escape from the police), Harvey decides to hire the young man, despite learning that he doesn't, in fact, have a law degree. He had a brilliant education but didn't graduate (for reasons we discover during the course of the series). Why did Harvey take such a risk? Because he discovered real potential in Mike! One of the main sources of tension in the series is the fear that someone will someday uncover the deception (which is bound to happen).

The series shows that a manager–managee relationship depends to a certain extent on first meetings, interviews and conversations, on the way we present ourselves to the other person, what we say to each other and what we hide. Establishing a good manager–managee relationship means first of all getting to know each other. This is fundamental to everything else. In *Suits*, whatever the case is about, the important thing is knowing the prosecutor, the client, all the people involved and understanding their motives, their goals and their ways of working. Because a case is not an organic entity that can be dealt with independently of those involved. Every action, every decision, is taken by one or more individuals– as Harvey, an inveterate poker player, summarizes in the phrase he repeats throughout the series: 'I don't play the odds, I play the man'!

We need to take the same tentative step when we begin working with someone new, particularly in the case of a manager–managee relationship. Whether or not they're poker players, good managers are of necessity gamblers: consciously or unconsciously, they're constantly taking risks with people!

Those of us who are managers are only too aware of the fact that whenever we recruit someone, we're taking a gamble. It doesn't matter how many times we interview a candidate, we'll only really discover what they're like once they're thrown in the deep end. We also take a bet on an employee's potential when we assign a particular project to them, knowing that they're really underqualified but believing that it'll stretch them and that, if they try hard, they'll be able to make a success of it. This ability to take risks is essential both for the success of the team and for the development of its members. Overly cautious managers, while believing that they're securing the situation, ultimately put the success and longevity of their team at stake. It's a bit like riding a motorbike: to be safe, you can't afford to be at the mercy of other traffic, you need to stay ahead. Good managers are just bikers who don't know it!

As candidates, too, we may take the same sort of gamble when we decide to join a company and work for a particular manager. We put our trust in people we don't know and take a risk with our ability to be ourselves as well as to thrive in the next stage of our journey.

Many people–both candidates and recruiters–are prepared to say anything in a job interview about their career, their company, their attributes or those of the company, if they think it'll help their cause. It's crazy the number of people who, during a job interview, claim to be trilingual in English, Italian and Thai, or the number of employers who state that they're offering a professional and caring work environment with extremely flexible hours. The reality is often quite different: on the candidate's side, they like eating Italian food and have seen lots of documentaries about Thailand. On the employer's side, the company is totally disorganized, they've just done away with the electronic clocking-in machine and plan to put teleworking in place by 2035.

We've all come across world-champion pick-up artists (men or women) ready to say anything to charm us. If we love Lithuanian cinema, they'll make out that it's their passion. If we're independent, they'll say they dream of separate bedrooms. If we tell them we tend to get very intense in relationships, they'll confess that they themselves have a flaw: they're too dependent on the other person in a relationship. In all areas, and especially between a manager and managee, the key to a healthy relationship is to be honest and sincere. It's better to miss out on an employer or a candidate than to have to hold back on who we really are, because, at the end of the day, it's our life we're putting at stake.

<p style="text-align:center">*</p>

Building a stable relationship

Between two individuals, harmony is never a given;
it must be conquered again and again.
Simone de Beauvoir, philosopher

For decades, becoming a manager was seen as a reward. If we obtained good results several years in a row, we were promoted to manager. A good salesman became the head of a sales team. A good project manager led a team of several other project managers, etc. The question was never raised as to whether the person being promoted had the necessary skills to manage a team well. Today, it's common knowledge that just because someone is capable of getting good results in their field, it doesn't necessarily follow that they'll make a good manager.

It's important to understand that the skills required to lead a team are different from those needed to achieve good results. Knowing how to do something and knowing how to motivate others to get things done are completely different skills! It's amusing to note that some people with only a smattering of experience or skill in a field can make very good managers. The issue is about having what we

call good soft skills–the behavioural, relational and social skills that make for great relationships.

In *Suits*, Harvey manages Mike in a very intelligent way: having soon discovered that Mike has an extraordinary memory, he entrusts him with projects that, in principle, require much more experience. Because of this, Mike becomes more and more interested in the job and grows into it quickly. It's an example of a relationship that works: the manager obtains the results that are expected of him and the managee thrives in his job. From episode to episode and season to season, Harvey teaches Mike all the tricks of the trade. His role is truly that of a mentor, which is like a luxury version of the manager–managee relationship–mentoring and management are quite different in nature. When I think mentor, *Karate Kid* immediately springs to mind. The film, based in California, tells the story of the caretaker of an apartment block, Mr Miyagi (Pat Morita), who takes an uprooted teenager, Daniel LaRusso (Ralph Macchio), under his wing. He teaches him karate and the moral code that goes with this martial art and he helps him grow in self-confidence and win a karate tournament, in which he's competing against his high-school bullies.

Sometimes a manager can also act as a mentor, as in the case of Harvey and Mike, but this is quite rare. More usually, mentoring and managing are done by different people with complementary skills. *Suits* goes even further in its portrayal of management, as Harvey develops a friendship with Mike. Almost like a brother, he protects him when he's received a hard knock and covers for him when he's made a mistake, while all the time ensuring that he learns lessons from such experiences that will serve him well in the future.

Clearly, the relationship described in *Suits* sets the bar high.

Nevertheless, we can see here something of what a healthy relationship between a manager and a managee can be. Their relationship is more like a partnership than the sort of hierarchical relationship that's common in many companies. In this respect, *Suits* can be seen as part of the long tradition of buddy movies, from *Lethal Weapon* to *Thelma and Louise*, which follow the adventures of two completely

different people who eventually flourish through their relationship with each other. The point of such a relationship is that it benefits both parties not just one person.

According to Daniel Pink, author of *Drive: The Surprising Truth About What Motivates Us*,[19] motivation comes from three factors: purpose, autonomy and mastery. The challenge of a manager–managee relationship is to find, among the manager's objectives, those that will motivate others, taking into account their aspirations and ambitions. It's to allow each person to be sufficiently independent so that they can try and learn from their own mistakes, recognizing that mastery comes with experience. It's the manager's responsibility to trust each person they're managing enough to allow them to exercise and develop their talents. This is something Harvey does very well. It's the managee's responsibility to express their desires and then to take responsibility for them. Mike does this very well, too. All this depends on an indispensable ingredient: trust.

<p align="center">*</p>

Learning to trust each other

'Whatever happens, they can kill me, I won't talk!' said Augustin Bouvet.
'Same here, they can kill you, I won't talk!' replied Stanislas Lefort.
'Ah, I knew we could count on you ...'
La Grande Vadrouille

In a manager–managee relationship, as in any relationship, trust is won and given on both sides:

–managers need to win the trust of the people they manage, because, just as we won't follow the advice of a doctor we don't trust, so an employee will never listen to a manager they constantly distrust;

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19. When there's trust, people are much more motivated.

–managees need to gain the trust of their manager by proving, when given the opportunity, that they're able to produce good results. It's a bit like the footballers who spend most of their time on the bench but occasionally have a few minutes to show their coach what they're capable of;

–managers need to know how to trust the people they manage, taking appropriate risks with them, otherwise these employees will never be able to develop and take on greater responsibilities;

–by definition, the managee needs to trust their manager, otherwise their relationship can quickly become hellish. I usually say to the people I manage: 'Please trust me unless I let you down or you feel betrayed. And if that ever happens, come and see me and I'll do everything I can to restore that trust'.

The reality cooking competition TV series *Top chef* provides some fine recipes for developing these ingredients. In the third season of the French edition of the show, Jean Imbert (winner of the now famous competition) was up against Cyrille Zen. In one of the final challenges, Jean spoiled a sauce that was a key part of his recipe. Seeing that he wouldn't be able to carry out his initial idea, he turned to two of his teammates and asked for their help. These two–both also good cooks–shared their ideas. And Jean listened to them, because he knew it was useless to persist with his original recipe, and because he had a high enough regard for his two teammates to trust them. The dish was clearly appreciated because Jean won the challenge.

One of the most effective ways to gain someone's trust is to trust them! And we need to be ourselves, humbly, without trying to impress or pretending to be perfect. This is one of the simplest and quickest ways to establish a relationship of trust.

In the same final, Imbert demonstrated both another way of trusting his teammates and a management style that was decidedly different from Cyrille Zen's. During one challenge, Zen issued instruction sheets to his team, specifying exactly how he wanted his recipes to be executed and the role he was assigning to each team

member. Although such a method has the advantage of ensuring that the recipes are executed as the chef wishes, it stifles the creativity of the rest of the team. Is it really fair to demand that others act exactly like us? Is that what delegation is? And how does this way of working allow others to reveal their talents and gain self-confidence?

Meanwhile, opposite him, Imbert arrived with some rough sketches. He'd left the execution deliberately vague, but this gave his teammates many more opportunities to put their own touch on his recipes. By trusting his team members, he empowered them and gained their motivation and commitment, but he also allowed them to prove what they could do. By wanting to control everything, we curb people's creativity and prevent them from showing us what they're made of. Imbert clearly understood this. I don't know whether he was the best cook in the series, but he certainly showed the best manager–managee relationship. No doubt that has contributed to his success.

As in any relationship, when trust is present, it enables people to overcome many hurdles and to be stronger together than they would've been on their own. To trust someone is to believe that we can count on them in all circumstances, which Mike and Harvey prove on many occasions. For example, Mike even goes to prison to prevent Harvey's incarceration (because he lied about Mike's alleged law degree). Without necessarily taking it that far, trust will certainly enable us to fully express our singularity and will help us thrive.

Another factor complements this relationship and enables us to advance our objectives even further: leadership! Being a leader is very different from being a manager. Depending on what we want to do with our life and the nature of our ideal job, we may find ourselves assuming the responsibility of a managee, a manager or a leader, sometimes all three. Today, all these notions need to be considered in relation to a group, a team, rather than being simply reduced to an individual.

The *Justice League* method

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SHARING LEADERSHIP

*The art of conducting consists in knowing when
to stop conducting to let the orchestra play.*
Herbert Von Karajan, conductor

Leaders are individuals who, thanks to their different qualities, are able to take a team–anything from a handful of people to a whole company or even a whole nation–from A to B. We can all think of many examples of leaders, all of them 'men (or women) of the moment'. In the business arena, men like Steve Jobs and Richard Branson have been able to move mountains and significantly impact, or even 'disrupt', entire industries on the strength of their vision and will alone.

Leaders are often said to be charismatic, magnetic, inspiring, tyrannical, obsessive, sometimes even spellbinding. Steve Jobs didn't exactly have the reputation of being a saint. Today, this form of very individualistic leadership is tending to change and even ebb away. We're now moving towards communal leadership. Some will say it's because people of that calibre are now few and far between. Others, that it's simply that times have changed and that great revolutions are now taking place in teams, with a community of people driven by a common cause. This should, in fact, be the very definition of the company.

Transforming the music industry, for example, is one thing, and we can imagine that someone with a sufficiently clear vision of developments in that industry could conceivably do so alone. Steve Jobs contributed to this transformation to a large extent with the iPod and iTunes. Saving the planet from its own destruction is another matter, and it will be necessary to assemble a whole community of people, from very different fields, to attain such a (highly desirable) goal.

The notions of management and leadership are very different from each other. Managers allow their teams to develop performance and

well-being in a given context, while leaders are the ones who also have the authority to change, when they deem it necessary, the context and the rules of the game that go with it! If the manager is the conductor, the leader would be the composer. On the strength of his composition, orchestras will be formed and will give of their best to magnify his creative work.

Films like *The Lord of the Rings* (following the adventures of the 'fellowship of the ring') and *Justice League* have a lot to say about leadership, and also illustrate the transition from individual to communal leadership. Each character in turn, according to their abilities and talents, becomes the 'man or woman of the moment', the leader, the hero, depending on the problem the community is facing.

Justice League, which features famous DC Comics characters such as Batman and Wonder Woman, was released with the tagline 'You can't save the world alone'. The message is clear–and clearly of its time: even superheroes with their superpowers no longer claim to be saving the world on their own. This theme is also present in the rival *Avengers* (the community from the Marvel team comprising Iron Man, Captain America, the Hulk, Thor, the Black Widow, Dr Strange, etc.).

At the beginning of *Justice League*, with Superman dead and Wonder Woman reluctant to take over, Batman takes the helm in leading the team, though he believes that Wonder Woman should be the leader because she has more skills for performing this role than he does. It's clear that we're in a world in transition, because even though the idea of communal leadership is displayed on the film poster, the question of who should lead is still arising, when in fact the only thing that matters is the reason the community was formed and the mission it's pursuing.

Whether leadership is communal or more individual, it requires a number of qualities that we'll need to develop if we are, when the opportunity arises or as the situation requires, to contribute our talents and rise to the challenge of directing operations.

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Sharing your passion

Nothing great in the world has ever been accomplished without passion.
Hegel, philosopher

One thing that all leaders in the world have in common is that they're all passionate about the field in which they exercise their leadership! It's difficult to seek to accomplish a goal that's often considered idealistic unless we care deeply about this goal. From Sting (ex-leader of The Police) to Kobe Bryant (American basketball star of the Los Angeles Lakers in the 2000s), leaders are always passionate about what they're doing. Let's take the example of Kobe Bryant. He always wanted to become a basketball player: as a small child, he would watch games endlessly and loved the sound of the ball in the net (that characteristic little 'swish') on a three-point field goal. (Though he explained in an interview that he preferred the 'swish' it made in the 1970s when the basket was designed differently.) He loved discovering details about the players, the ball, the court–everything to do with the game, in fact. When we listen to Sting, it's the same story. Now in his late sixties, he's happy to tell us that he still practises his instruments–in particular his bass and his voice–every day. He continues to take singing lessons, and, unlike many singers, whose voices begin to sound tired as they get older, Sting's voice just keeps getting better. Passion drives work and work earns the respect of those around us. There's something exemplary about it that motivates others to follow us.

We can't become true leaders without wanting to share this passion. This passion can even become an obsession that, far from being a weakness, is often essential to success.

Stanley Kubrick was famous for making his actors redo takes, sometimes a hundred times, until he saw in the camera what he was looking for. As the famous record producer Jimmy Iovine testifies

in the Netflix series *The Defiant Ones,* the Irish band U2, acknowledged perfectionists, have been known to spend entire nights in the recording studio, seeking for a musical effect that only the band members themselves can discern. Jonathan Ive, the genius designer behind the iMac, iPod, iPhone and iPad, went so far as to measure the spacing between the screws on the iPhone, their brilliance and their shape. Who cares about such details, you might think. Others may not, but he certainly does! According to Ive, the stylish appeal of the objects he designs is precisely the result of such attention to detail.

A documentary following the famous rugby player Jonny Wilkinson at Toulon showed a determined man who, despite his incredible skills, would train before other players arrived and after they'd left, constantly hitting the ball between the posts, over and over. As he explained, 'You have to work hard enough to turn "I hope it goes in" into "I'm expecting that every strike will, or could, go in"; "There's no such thing as luck, only merit!"; "Victory is a passport to achieving more"; "You have to work hard enough to have no regrets".

Reading these different examples, we might think to ourselves, OK, that's not for me, I'm not a leader. First of all, it should be said, we can live very well without being a leader. Managing ourselves is sometimes quite difficult enough to do! What we're talking about here is overcoming the various obstacles we face and keeping our passion and motivation alive so that they can inspire others to follow us.

Quite slight, rather reserved and not particularly charismatic, Bruce Springsteen didn't have the profile of a leader, yet he's become one with his famous E Street Band. He was so passionate and obsessed about music as a teenager that he devoted all his free time to practising his guitar and singing. He left school quite young and performed hundreds of concerts and made several records before he hit the big time. No doubt he would've stopped sooner had he not had this passion and drive. He's also proved himself to have another quality that's very important for establishing leadership: the ability to convey his vision of music.

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Sharing your vision

*If you want to build a ship, don't drum up people to collect wood
and don't assign them tasks and work, but rather teach them
to long for the endless immensity of the sea.*
Antoine de Saint-Exupéry, writer

Leaders are often referred to as visionaries. Visionary, here, however, doesn't mean being able to predict the future, but rather being able to invent it! When James Cameron, George Lucas or Peter Jackson have an idea for a film, but lack the technology that would enable them to make it, they don't wait idly until the technology has evolved. Instead, they work hard with the special effects companies they've created, to remain autonomous, in order to make it happen.[20] And in so doing, they advance the whole film industry. If we review *Avatar*, *Star Wars* or *Lord of the Rings* in the context of their time, it's clear that a leader can work miracles!

It's in this respect that leaders are visionaries: they're able to envisage something and be so sure that their vision can be realized that this does actually happen. A leader creates a vision, whereas a manager helps realize it.

Managers give meaning to the activity of each of their team members by personalizing the relationship they have with their work, by designing a framework that's adapted to their expectations and way of working. Leaders also give direction, but on a more global scale. Leaders don't deal (locally) with the focus of each person's activity, but bring a (global) focus, which is the reason why each employee belongs to this company rather than another, is part of this particular adventure and defends this particular cause.

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20. Digital Domain Media Group Inc., Industrial Light & Magic and Weta, respectively.

If we want to develop this global perspective, we need another quality: the ability to step back and see the bigger picture. This means being able to both distance ourselves from what others might think or say and gain an overview so that we're better able to move in the right direction. Regarding the first point, whether people think our vision is realistic, utopian or absurd, we need to understand that the vision is about what we want to do and accomplish, not about who we are. These people are critical of our vision, not of us personally. If we allow every criticism to sway us, we can forget about attracting crowds one day. Whenever we try to convince people to go from A to B, there'll always be someone who'll tell us it's a stupid or impossible idea. As for the second point, obstacles are par for the course (remember Aaron Sorkin). It's vital that we discover within ourselves those functions that are available on any good GPS: the ability to 'zoom in' and 'zoom out'! To arrive at our destination, we need to anticipate the hazards, in the same way that a GPS will anticipate traffic jams and direct us on a different route before it's too late and we're stuck. This ability to put things into perspective and anticipate what might or will happen is clearly a hallmark of great leaders.

We need to make the following story our own. One day, a monk decided to leave his monastery behind and go off alone to meditate. He set off in a boat and, some way off from shore, cast anchor, closed his eyes and began to meditate. After a few hours of silence, he suddenly felt the shock of another boat hitting his. Eyes still closed, he began to fume with anger, then rage. He opened his eyes, ready to scream at the boatman who'd disturbed his meditation so abruptly. He was dumbstruck: the boat that had hit his was empty. The boat had obviously become detached from its mooring and drifted out to sea. The monk realized that the slightest impact from outside was enough for him, all by himself, to become furious. From then on, whenever he met someone who irritated or angered him, he remembered: this anger is my problem. The other person is just like that empty boat.

To be a true leader means understanding that the only real adversary is ourselves! Blaming others is useless. Whatever the cost, we

need to stay the course and move forward. In fact, this is one of the reasons why people like to rally to a leader's cause, because, like a sort of infallible compass, a leader will ensure that they don't get lost along the way. This means, in a sense, that leaders need to be generous, because they have a responsibility to others.

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Wanting to succeed with and for others

People don't wanna follow an idea, they wanna follow a leader.
Jared Dunn, Director of Operations, *Silicon Valley*

When I think of leadership and generosity, I think of Sting, Mother Teresa and the French comedian Coluche: people who've given their time, their money or their heart and rallied others to their cause to care for the neediest. What these people have in common is that they've all–at least at some point in their lives–learned to put others before themselves. A key characteristic of leaders is that they give themselves to their cause!

None of these people could have achieved what they did without the help of those who followed them. Take Coluche, for example: he created the French charity Restos du coeur (meaning restaurants of love) in 1985 to distribute food packages and hot meals to the poor. He was immediately able to rally a large number of artists and celebrities to his cause, starting with Jean-Jacques Goldman, who wrote the song, 'Chanson des Restos', that became the charity's anthem. Coluche died in 1986, but his project survives him, thanks in particular to his ex-wife, Véronique Colucci, and to Jean-Jacques Goldman (who, incidentally, for some years now has appeared in public only during the charity's annual benefit show).

True leaders don't just surround themselves with followers; better, they seek to promote those around them above themselves. Sometimes by pure altruism, but often because they know that, as the saying goes, 'alone we go faster, but together we go further'.

Once again, sport provides a good example of the value of working to develop others.

In the American basketball league, the big leaders of teams–Michael Jordan with the Bulls, Kobe Bryant with the Lakers, LeBron James with the Cavaliers–were able to win titles only because they had good people around them. From his arrival in the league in 1984, Michael Jordan established himself as the leader of his team, even receiving the distinction of 'Rookie of the Year'. But it took him seven years before he won his first NBA title, when he was notably supported by Horace Grant and Scottie Pippen. He was often seen passing the ball to his teammates when he was in a position to score, making an increasing number of assists over the years, as if inviting each player to grow, take risks and gain confidence. He was known for being pretty tough with them, both on court and in the locker room. But, as he said in his defence many times, the goal was in no way to 'take it out on them' but rather to urge them to do better, give more, push themselves further. It clearly paid off, as during the last three Bulls' victories, it was no longer the 'Michael Jordan show' we were watching but a team of leaders on court, each taking turns to encourage the others to give the best of themselves. Scottie Pippen could take the lead in the first half, before Jordan came in for the second half. It's a good example of shared leadership.

Incidentally, many commentators and analysts who've long been convinced that Pippen would never have become a star without Jordan, have also wondered if the opposite isn't equally true. Just as we might wonder whether Batman would have had all those adventures without Alfred, his famous butler. Or whether Steve Jobs would have impacted so greatly the beginning of the third millennium without Jonathan Ive, his genius designer. Or whether Barack Obama would have been elected, and re-elected, without Michelle.

Whether we realize it or not, leadership is mostly shared. We need to be humble enough to know how to ask for help from others at the right time and to recognize that we rarely walk alone.

In summary, as we've seen, it's possible to travel along a company career path–or at least some of it–without having to abandon our

singularity. Indeed, we can even thrive within a company. To do this, however, we must ensure that we're:

–being ourselves: while we may sometimes need to adapt our behaviour to circumstances, we should never renounce either our singularity or our ideal vision of work
–contributing to company projects that resonate most with us and that are in line with our personal goals
–creating our own 'playing field', including putting our mark on everything we do
–making generational diversity an opportunity to be open to new ideas, solutions and directions
–building healthy manager–managee relationships where everyone's happy
–developing leadership qualities that enable us to invite others along on our adventure, for the benefit of all.

As it happens, the company is about to welcome new partners–non-human ones this time–that it doesn't yet know what to think about and what to do with. In business, as in society, we're wondering about the impact that these technologies–artificial intelligence and robots–will have on our lives. How can we make them serve our singularities and our way of life?

Technological singularity

FROM PANIC TO POSSIBILITY

When you have learned to despair, I will teach you to want.

Seneca, philosopher

In some senses, we've not been prepared for the 'technological tidal wave' that's hitting us. The first wave, which we call digital transformation, has radically changed our society over the past 20 years, and is trying today to make a breakthrough in our businesses–with some difficulty. The second digital wave, which we're beginning to see approaching, promises to be even more disruptive–if the fantasies depicted in TV series dealing with the subject are to be believed. *Altered Carbon*, *Real Humans*, *Black Mirror*, *Westworld* and *Philip K. Dick's Electric Dreams* all raise the same question: by introducing exponential technologies (artificial intelligence, robotics, virtual reality, biotechnology, the Internet of things, etc.) into our lives, are we building a utopia or a dystopia? Each of these series provides its share of answers, which are sometimes reassuring but more often worrying.

Intellectuals, entrepreneurs and philosophers are also adding grist to the mill of these reflections–with varying degrees of brio. When Elon Musk talked about artificial intelligence (AI) as 'the greatest risk we face as a civilization', Mark Zuckerberg condemned his remarks as 'irresponsible'. To which Elon Musk replied: 'I've talked to Mark about this. His understanding of the subject is limited.' This sort of

sparring smacks more of an altercation between the eponymous heroes of *Asterix & Obelix* than of a reasoned discussion between two of the greatest entrepreneurs on the planet.

When talking about AI, we need to keep in mind that this is a billion-dollar industry. It's therefore difficult for entrepreneurs working in the field to be unbiased.

One of the reasons that the subject fuels people's imaginations to such an extent, leading them to overstep rational boundaries, is because it's surrounded by a lot inaccuracy. Terms such as cybernetics, transhumanism, technological singularity, robotics and artificial intelligence are wrongly bandied about in articles, lectures and social-media discussion groups, without any clear and universal definitions being given. The media, which is generally much more interested in focussing on the negative than the positive, has a field day with these topics, effectively passing on the worst-case scenarios.

But what we're interested in here is gaining a better understanding of how these technologies can help us discover what we want to do with our lives and be fulfilled.

Drawing inspiration from Ex Machina

REDEFINING THE MEANING
OF TECHNOLOGICAL SINGULARITY

The saddest aspect of life right now is that science gathers knowledge faster than society gathers wisdom.

Isaac Asimov, writer

In 2006, the famous inventor, author, researcher and futurologist Ray Kurzweil, who today works at Google, published a book with the enigmatic title *The Singularity is Near: When Humans Transcend Biology*. The technological singularity he refers to is the moment when machines will pass the Turing test. Alan Turing was one of

the fathers of computer science. According to the test he described, if we hold a conversation with a machine without knowing that it's a machine, then bingo, the machine has passed the Turing test. And according to Ray Kurzweil's latest forecasts–which he keeps updating–technological singularity should occur in 2029. Which can be implicitly translated as: by 2029, machines will be as intelligent as humans. However, we refer to the Turing test precisely because it's impossible to compare the intelligence of a machine with that of a human because we remain unable to define intelligence. We can merely list some of its characteristics–a bit like smoke signals from a fire we've not managed to locate.

Technological singularity is a central theme of *Ex Machina*, a film released in 2014 that helps us to better understand it. A young employee (Caleb, played by Domhnall Gleeson) of a company that's the spitting image of Google wins a contest organized by his boss, Nathan (Oscar Isaac). The reward is an invitation to join Nathan at his isolated mountain home to participate in an experiment: to determine whether an artificial intelligence with the features of a young woman ('Ava', layed by Alicia Vikander) that he has created can pass the Turing test. In other words, will Caleb feel like he's with a real woman when he's talking to her? If so, this would indicate that she has the full range of human emotions and that she's even self-aware.

An artificial intelligence with self-awareness is described as 'strong'. By contrast, 'weak' (or narrow) artificial intelligence–the type we know today–reproduces or simulates human behaviour without the least self-awareness.

What makes this film interesting, besides the plot twists that keep us in suspense, is the issue of how we can determine whether a machine is aware of itself or not. And indeed, while consciousness is considered to be the ultimate differentiating factor between a human and a machine, what actually is it?

All these questions are posed in *Blade Runner*, which was released more than 35 years ago. In this film, Rick Deckard falls in love with Rachael, an android, who, like all the other androids of her generation (called 'replicants') worries about her own demise because their

designer has set an expiry date. So, we're given to understand that these human-looking robots may also have a conscience, which drives them to stay alive as long as possible. In this film, there's also an incredibly tense scene where Deckard gets Rachael to sit the Voight-Kampff test (the fictional equivalent of the Turing test) to discover whether she's human or not. When he realizes that she's a replicant, he turns to her creator ('Voight', hence the name of the test) and asks him the terrible question: 'Does she know?'

Although the notion of technological singularity is becoming clearer, it's extremely difficult to predict whether it will emerge tomorrow or in 200 years' time.

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Technological singularity: myth or reality?

'Look, I'm not stupid, you know. They can't make things like that yet.'
'Not yet, not for about 40 years.'
Sarah Connor and Kyle Reese, *Terminator*

When the notion of technological singularity is mentioned, it's not the Turing test that most of us immediately think of but *Terminator* and all those other dystopias where machines have become so intelligent and sophisticated that they decide–who knows why– to eliminate us. It's the technological counterpart of Mary Shelley's *Frankenstein*. In *Terminator*, machines want, in a rather simplistic way, to exercise power without having to be troubled with the burden of humans. The robots with AI in *Westworld* are intellectually more sophisticated. Tired of being mistreated by visitors to the amusement park who've come to experience life in the Wild West, they rebel to emancipate themselves from their creators' control. More radically, given their self-awareness, they seek to develop their free will and construct their own scenario, where they'll be able to experience feelings for other robots. But the eternal question remains: what if

these feelings and scenarios are merely the unconscious execution of the programme implemented by their creators?

This idea of the creator dominated by their creation is developed by Swedish philosopher Nick Boström in his book *Superintelligence: Paths, Dangers, Strategies*. In it, he predicts the emergence in the coming decades of a superintelligence–in other words, a strong AI–with cognitive skills superior to those of humans in most fields and that will be eager to eliminate us. Contrary to what is often portrayed in science-fiction films, he believes it won't have a humanoid config-uration, but an artificial and digital appearance, rather like the HAL 9000 supercomputer in *2001: A Space Odyssey*, the cult film by Stanley Kubrick. It's a theory that's also espoused by James Barrat in a book with the (not very) reassuring title: *Our Final Invention: Artificial Intel-ligence and the End of the Human Era*.

In contrast, Douglas Hofstadter–the author of *Gödel, Escher, Bach: An Eternal Golden Braid*, which won the Pulitzer Prize for general non-fiction in 1980–brings us down to earth by reminding us of the current capabilities of artificial intelligences. As he says in his 2013 book written with Emmanuel Sander, *Surfaces and Essences: Analogy as the Fuel and Fire of Thinking*, computers still struggle to recog-nize a simple handwritten letter. This recognition task also serves as a basis for the famous CAPTCHA (Completely Automated Public Turing Test to Tell Computers and Humans Apart). These applica-tions require distorted text to be decrypted and the characters copied when registering on a website, for example, to verify that the 'person' is a human and not a robot.

He also subtly reminds us to pay attention to those everyday little phrases such as: 'Oh yes, exactly the same thing happened to me!', because the mystery of the human mind lies behind such simple words. Our brain is extraordinary in that it functions by analogy and establishes very abstract correlations between two elements that don't actually have much in common, but that we–and sometimes only we–manage to connect. This is also how we can recognize someone by a gesture, posture or walk, even if their face is masked by sunglasses and a cap (much to the despair of celebrities).

While Hofstadter believes that technological singularity isn't about to occur any time soon, he doesn't propose a theory to counteract the dystopias mentioned above. He simply suggests that we still have some time before they emerge. So, why is no one suggesting a more optimistic scenario, where artificial intelligences seek to protect rather than exterminate us, where they would repair the mistakes that currently threaten the future of our planet–benevolent AI, if you like? And are science-fiction writers naturally pessimistic or are they just responding to the demand of readers and viewers eager for disasters?

To go back to *Westworld*, AIs rebel partly because they're tired of being exploited and abused. What would happen if these new life partners were properly treated? And if we were even to help them lead 'ordinary' lives, like humans? These are the sort of questions that science fiction and our society could soon have to tackle.

It's very difficult to know who–Nick Boström or Douglas Hofstadter–is right about the imminence of technological singularity. What we do know, however, is that Lil Miquela currently has over a million followers on Instagram, stole the limelight from models during a Prada show, has become the muse of Pat McGrath (famous for the makeup of models at most fashion shows) and is going out with one of the members of the band Portugal. The Man. What's the connection, you might ask? The connection is that Lil Miquela doesn't exist! She's an avatar created and managed by an AI. Seeing her photos, especially those where she's seen with her–real, human–boyfriend, it's easy to think that the distinction between the virtual and the real is becoming very tenuous. And, unless you're of the opinion that being a model or an influencer on Instagram requires no intelligence, it's hard not to start believing in the emergence of technological singularity.

**Artificial intelligence: reproduction or simulation
of human intelligence?**

Artificial intelligence is defined as the opposite of natural stupidity.
Woody Allen, film director

AI is anything but new. It emerged more than 60 years ago, in 1956, at a summer school in Dartmouth, where prominent scholars like Alan Newell, Herbert Simon, Marvin Minsky and John McCarthy were asking themselves the simple question: can a machine think?

This question can be interpreted in two ways:

–Could a machine replicate the complexity of human intelligence and solve problems like a human would?
–Could a machine solve problems that require *a priori* human intelligence, even if it's only simulating it?

These two interpretations have given rise to two 'schools' of thought, which have continued to contradict each other. Those who leaned towards the first approach created symbolic learning, knowledge engineering and expert systems and followed a 'deterministic' or 'symbolic' approach. This involves solving problems, known to humans, based on rules, facts and modes of reasoning, and teaching all this to the machine. These rules are activated when the conditions are met for them to do so. For example: when you're driving, if someone not only cuts you up but also shouts insults at you, you may honk your horn as loudly as you can and, sitting on your own in your car, get really wound up. Whether we realize it or not, these kinds of 'rules' (the merits of which are debatable, of course) affect much of our behaviour. This approach is known as 'deterministic' because it's possible to guess how someone who follows these rules will behave.

Those who tended towards the second approach created machine learning, neural networks and deep learning, following a so-called 'probabilistic' or 'connectionist' approach. This involves using the

computing power of the machine and the data available to simulate all possible situations and calculate the probability of them occurring, analyse them and make a decision when requested. The fact that AI continues to thrive is a result of following this probabilistic approach. Only a few years ago, work done on deep learning (the automatic learning mechanism used, for example, for facial and voice recognition) finally allowed machines, when presented with images, to recognize cats or distinguish Chihuahuas from cookies with a very low rate of error. While a child is able to do this at just a few months old, it took AI nearly 60 years to get there. But now that this inflexion point has been reached, AI is developing much more rapidly than even the smartest of us.[1]

Facial recognition is a central theme of the TV series *Person of Interest*, which depicts an AI connected to the Internet capable of predicting a crime and picking out in a crowd the face of the person concerned by this crime. The only problem is that the AI doesn't indicate whether the person is the victim or the perpetrator. It's worth noting that a surveillance system of this type was recently implemented in China: 170 million cameras have been allocated to various Chinese cities and the plan is to install a further 600 million throughout the country in 2020.[2]

The fact that AI has become so popular is largely due to the defeat in 2016 of Go champion Lee Sedol, whose opponent was an artificial intelligence developed by Google DeepMind, AlphaGo. The Go game, extremely popular in Asia, is probably the most complex board game that exists. It was expected that a machine would one day win at chess against a human, as this was one of the earliest AI research projects, and this happened in 1997, when IBM Deep Blue beat Garry Kasparov. Less expected was that an AI would win the

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1. Hence the term 'exponential technologies', because their development is following an exponential mathematical curve: flat for a long time, then an almost vertical development since the inflection point was reached.

2. To find out more: https://www.nytimes.com/2019/04/14/technology/china-surveillance-artificial-intelligence-racial-profiling.html (accessed May 2019).

general-culture game Jeopardy!, yet this occurred in 2011. But no one was expecting to see a machine win Go. Or at least not so soon.

The reason that today's AI seems to work better than 20 years ago is linked less to the discovery of magic algorithms than to the phenomenal increase in machine power and the incredible proliferation of data (due to the Internet, smartphones, etc.).[3] This favours the probabilistic approach, responsible for performing all kinds of calculations, rather than the deterministic approach, which is intended to reproduce human cognitive functioning–although it hasn't managed to speed up human understanding for all that.

AlphaGo's victory over Lee Sedol is remarkable in that it skilfully combined probabilistic and deterministic approaches, using two methods:

–value network: performing a statistical evaluation of all the moves that could lead to victory, bearing in mind that the combination of moves is much greater than in chess (the probabilistic approach)

–policy network: aiming to reduce the number of possible moves by integrating the experience of highly qualified players, including that of European champion Fan Hui (the deterministic approach).

So, it was believed that the approaches involving reproducing and simulating human behaviour could be combined effectively. But that was without taking into account the emergence of AlphaGo Zero, which

was able to learn to play Go in three days, without having been either shown a match or taught any strategy or practice (other than the rules of the game). AlphaGo Zero learned simply by playing 4.9 million games against itself (so-called reinforcement learning), without any human supervision. It ended up surpassing the strength of the AlphaGo version that had won 4-1 against Lee Sedol by

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3. This increase follows Moore's law that predicts that machine power doubles every 18 months, due to doubling the number of transistors on a circuit of the same size.

winning 100 games to 0–establishing the AI probabilistic approach as the (current) big winner!

If we understand a little better what artificial intelligence is, that doesn't explain why all the series mentioned above seem so afraid that it'll invade our lives and take control from us. Even if a computer with strong AI were to develop evil intentions, we would simply need to unplug it to pacify it. Well, that's the theory, at least. Problems would arise, however, if AI were incorporated in physical objects in our environment.

<p style="text-align:center">*</p>

What form will AI take in our societies?

A robot is not quite a machine … a robot is a machine that is made as much like a human being as it is possible to make it.
Isaac Asimov, writer

The first objects that will benefit from AI are robots! These have been part of our daily life for decades–our coffee makers, blenders, washing machines, etc. To the best of my knowledge, we've never been afraid of these household appliances, because we've never thought about them making autonomous decisions. It's when we imagine them equipped with strong AI, and thus powerful enough to develop their own will, that we become apprehensive.

In 1976, Philip K. Dick asked a curious question in his eponymous novel: 'Do robots dream of electric sheep?' The implication was that robots might be able to behave, even dream–one of most human activities there is–like us. The novel inspired the famous film *Blade Runner*, which features androids (humanoid robots) with a conscience, trying to escape their programmed death. Although it's become one of the ultimate references regarding androids, this novel wasn't the first to imagine our cohabitation with these new 'partners'.

In 1939, Isaac Asimov began building an extremely sophisticated vision of them in the *Robot* series, a collection of 38 short stories and

five novels: *I, Robot*, *The Caves of Steel*, *The Naked Sun*, *The Robots of Dawn*, *Robots and Empire*.

Three laws of robotics are mentioned in each of these books:

–First law: A robot may not injure a human being or, through inaction, allow a human being to come to harm.
–Second law: A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
–Third law: A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws.

It would seem that all the illusions we have about robots are based on the fear of one of these three (entirely fictional) laws being violated. Although AI can, like HAL 9000 in *2001 A Space Odyssey*, take control of a space shuttle, robots are more terrifying in that they can physically act in our world. What if, to protect their existence, robots were to suddenly decide to violate the third law and take control of operations, relegating humans to oblivion?

This is precisely what happens in *I, Robot*, directed by Alex Proyas and starring Will Smith, a film freely inspired by Asimov's novel. In the film, VIKI, an AI connected to all the robots that populate our planet, finds a way around the third law without directly violating it. In view of the damage caused by humans on Earth, which jeopardizes their very existence, VIKI decides to sacrifice some in order to save others. Killing a human in the interest of humanity is a flaw that their creator, Dr Alfred Lanning, had certainly not anticipated. The film presents what so many of us fear: the ability of machines to circumvent their original functioning by finding a flaw (and there almost always is one, to the delight of hackers).

To what extent are our fears linked to the science-fiction films we've been feeding our minds with for so long? Is science fiction like a line pulling us in to the future–an extrapolation of what could happen, or is already happening? Or is it that our society draws inspiration from it to evolve? A bit like in *The Matrix* when the oracle says

to Neo (Keanu Reeves) as he enters a room, 'And don't worry about the vase'. As Neo turns around to see what vase the oracle's talking about, he accidentally knocks it over and breaks it. Did the oracle tell Neo not to worry because it had 'seen' that he was going to knock it over, or did he knock it over because the oracle made the comment? No one has the answer.

Furthermore, just as robots form the link between AI and the physical world, so the Internet of Things (IoT) does the same between the Internet and the objects we use every day. This is what we call 'smart devices'. There are many examples: self-driving cars, smartphones, smartwatches, refrigerators, radiators, etc. High-profile sectors in this area are home automation, e-health and what is known as Quantified Self: Apple Watch and the Fitbit watch are good examples of self-tracking smart devices.[4]

Only a few years ago, smart devices numbered in the millions. According to the Swiss Federal Institute of Technology (ETH Zurich), there will be 150 billion by 2025. A figure That the International Data Corporation (IDC) has increased to 212 billion by 2020. The amount of data generated, meanwhile, could double every 12 hours in 2020, while it doubled only every 12 months in 2015.[5] Meanwhile, the average cost of sensors dedicated to IoT was $1.30 in 2004 and will be $0.30 in 2020,[6] which means that the conditions are right for everyone to have access to this technology.

What scares us about IoT falls into the realm of fantasy, like the ideas we've formed about robots. We fear that smart devices will start talking to each other and foment a conspiracy against us humans, taking control of our entire environment against our will. What might happen if our smartwatch was to speak to our connected car? All this takes us back to the 1980s and stories by Stephen King such as *Christine,* in which an old Plymouth Fury 58 seems to have a mind

4. Quantified Self includes tools that enable us to measure, analyse and share our personal data.
5. http://www.industrytap.com/knowledge-doubling-every-12-months-soon-to-be-every-12-hours/3950 (accessed July 2019).
6. https://www.theatlas.com/charts/BJsmCFAl (accessed May 2019).

of its own–despite not being connected–terrifying its passengers. In the film's trailer, there's one sentence that effectively sums up our fears: 'How do you kill something that can't possibly be alive?'

In short, technological singularity has an ambition to endow machines with intelligence–and is surrounded by a lot of delusions. One of the things we fear most about AI is the impact it will have on our jobs: will automation mean an end to them? If so, what are we going to do? Will we still be able to contribute to society? And if so, how?

Drawing inspiration from Garry Kasparov

PRE-EMPTING THE IMPACT OF AI ON OUR JOBS

We must face our fears if we want to get the most out of technology
–and we must conquer those fears
if we want to get the best out of our humanity.

Garry Kasparov, chess champion

Once again, if speculative TV series like *Trepalium* are to be believed, the worst is yet to come in terms of employment and work. This dystopia depicts a near future in which a 'wall' separates the 80 per cent of the city's population who don't have jobs, called the 'Zonards', from the 20 per cent who do. Of course, the Zonards mean to rebel against this social injustice.

Will AI and robots replace us and do away with our jobs? Will they turn us into Zonards? In fact, artificial intelligence has already invaded companies, in a similar way to what happened in factories a hundred years ago:

–in marketing and advertising, AI can direct relevant messages to the right consumers and buy the best advertising space
–in financial trading rooms, AI is now trading at high frequency, i.e. high-speed transactions based on mathematical algorithms.

This represents 35 per cent of transactions in Europe and 70 per cent in the US. Of course, automation can accelerate the fall in the event of a crash

–in automated industrial design, an AI relying on machine learning offers the designer different options for the design of a given object

–thanks to sensors, AI also maintains lifts, predicting potential breakdowns

–in warehouses, robots have started to replace humans, following the example of Alibaba.[7]

In Japan, Spread, a lettuce farm, is 100 per cent robotic, producing more than 30,000 heads of lettuce per day. According to one of the company's managers, Koji Morisada, seed planting will be done by people, but the rest of the process, including harvesting, will be done by industrial robots.[8] Also in Japan, the robot Erica,[9] created by Hiroshi Ishiguro (director of the Intelligent Robotics Laboratory in Osaka), is expected to soon present a newscast.

If we compare what's become known as 'robolution'[10] with the age of industrialization, the latter was jeopardizing jobs held by low-skilled workers ('blue-collar workers'), but robolution threatens to affect all jobs. While cashiers in our supermarkets are beginning to be replaced by machines, 'white-collar workers' are also affected: journalists, artists and doctors–no one is immune.

For example, the surgical robotics market is expanding: it's estimated that by 2024 it will be worth $98 million.[11] We need to be

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7. To view this warehouse in operation: https://www.youtube.com/watch?v=FBl4Y55V2Z4 (accessed July 2019).

8. For more on this farm: https://www.sciencealert.com/a-japanese-company-is-building-the-world-s-first-autonomous-farm (accessed May 2019).

9. For more information: https://www.theguardian.com/technology/2015/dec/31/erica-the-most-beautiful-and-intelligent-android-ever-leads-japans-robot-revolution (accessed May 2019).

10. A neologism created by Bruno Bonnell, founder of Infogrames, from the contraction of the words 'robot' and 'revolution'. Bonnell is convinced that the arrival of intelligent machines will turn the world as we know it today upside down.

11. For more information: https://www.alliedmarketresearch.com/surgical-robotics-market (accessed July 2019).

careful not to draw hasty, Hollywood-style conclusions, however. Today, robots assist surgeons in their tasks, but there's no question of them being replaced. Some surgeons can now remotely operate on a patient located hundreds or even thousands of kilometres away, by giving orders to robots located next to the patient. But these robots are not (yet) autonomous.

Every day we hear more examples of robots and artificial intelligences occupying jobs previously held by humans. It would seem, however–contrary to the report on the impact of AI commissioned by the French government, known as the Villani report (after its author)[12]–that we're finding it more difficult to focus on or identify the opportunities created by these new 'colleagues'.

<p style="text-align:center">*</p>

Sharing our jobs with machines

As the old Russian saying goes, if you can't beat them, join them.
Garry Kasparov, chess champion

At the beginning of *I, Robot*, set in Chicago in 2035, we see robots living like humans and occupying all kinds of jobs: delivering newspapers and parcels, collecting rubbish, dog walking, etc. The goal of the company manufacturing these robots is to make sure that there's one robot per five inhabitants, thus turning them into essential life partners. In anticipation of this potential or future reality, the Villani report (in the chapter on labour and employment) provides a lot of information that helps us gain a better understanding about whether AI, robotization and automation pose a threat to our jobs or whether, on the contrary, they provide an opportunity. Do we, or do we not, have any real cause for concern?

12. Cédric Villani, Mathematician and Member of the French Parliament, *For a Meaningful Artificial Intelligence: Towards a French and European Strategy*. To read this report: https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf (accessed May 2019).

First of all, some figures. According to the 2013 report by econo-mists

Frey and Osborne, 47 per cent of jobs in the US will be jeopardized over the next 20 years.[13] The latest study published on the subject, produced by the Conseil d'orientation pour l'emploi (employment orientation board, a French government entity that reports to the Prime Minister), predicted, following another method, that 10 per cent of jobs will be in danger of disappearing, but that 50 per cent will potentially be more than 50 per cent automated.

These studies clearly agree that many jobs are likely to be lost. Other studies, on the other hand, seem to take more of a 'glass-half-full' approach and focus on the jobs that will be created. A study published by Dell Technologies and conducted by the Insti-tute for the Future (IFTF) indicates that '85% of the jobs that will exist in 2030 haven't been invented yet', which gives us more cause to be optimistic.[14] But what do we do about this 10 per cent or 47 per cent of jobs disappearing and 85 per cent of jobs that will be created? Is it a case of simple subtraction? Are we talking about the same jobs? Clearly, this war of numbers isn't sufficient to reassure us.

Nicolas Bouzou, author of the book *Le travail est l'avenir de l'homme* (work is the future of man), might provide a good place to start if we're to find answers to these questions:

The limitation of Frey and Osborne's study is the confusion between tasks and jobs. Technology can have three consequences for work:

–It can completely replace a job by automatizing it, but this phe-nomenon is rare. Just because a job is automatable, it doesn't follow that it will be automated. Only one occupation has com-pletely disappeared in this way in the US since the 1950s: that of

13. To read this study: https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf (accessed May 2019).
14. To read this report: https://www.ora.ae/news-report/dell-85-of-the-jobs-that-will-exist-in-2030-havent-been-invented-yet (accessed May 2019).

elevator operator. We therefore need to relativize this fear of the total disappearance of jobs in the black hole of automation.

–It can do away with certain tasks within a surviving occupation: secretaries no longer take shorthand, but instead organize agendas, greet clients and deal with the general administration of organizations. Increasingly, they're called office managers. Janitors no longer open the door of buildings, but rather ensure that the 'climate' of life there is pleasant, something no technology will ever be able to do.

–It can make a product disappear, along with related trades. The motor car killed off occupations linked to hansom cabs, while electricity marked the demise of lamplighters. Typewriter manufacturers no longer exist. This phenomenon is central to the Schumpeterian theory of creative destruction.[15]

A report by the McKinsey Global Institute covering 46 countries and representing 80 per cent of the global workforce is in keeping with Bouzou's findings. It explains that less than 5 per cent of jobs are likely to be fully automated and that about 60 per cent will include 30 per cent automated tasks.

This issue of automation is central to the debate about the impact of AI on our jobs. The difference between a self-driving car that's 99 per cent automated and one that's 100 per cent automated may seem minimal, but pragmatically, what it amounts to is this: give or take 1 per cent and you need, or don't need, a human in the car! It would seem, therefore, that those of us working in the automobile industry will soon be welcoming AIs to work alongside us, and we'll need to learn to collaborate with them.

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15. To read the article (in French) from which these comments have been taken and translated: https://lexpansion.lexpress.fr/ actualite-economique / the-progress-technology-is-multiplier-d-jobs-advancedenicolas-bouzou_1943316.html (accessed May 2019).

Dividing up tasks

Machines have calculations; humans have understanding.
Machines have instructions; we have purpose.
Machines have objectivity; we have passion.
Garry Kasparov, chess champion

Laetitia Vitaud raises many pertinent questions about the issue of the division of tasks between us and AI in her article entitled 'Extension du domaine de la routine' (extending the field of the routine).[16] She explains that the distinction between routine and non-routine tasks is no longer as relevant as it once was: Artificial intelligence is nothing like human intelligence. Lacking the ability to 'understand' and 'reason', it settles for scanning vast quantities of data and 'simply' calculating. However, this type of intelligence is perfect for accomplishing certain tasks that are deemed non-routine. For example, AI can make reliable medical diagnoses by collating millions of medical cases in a way that no doctor could do. In short, intuition and experience, which we used to consider to be so invaluable, have been overtaken by AI's exploitation of big data. Conversely, some routine tasks are not easy to automate. For example, automating the work done by cleaning staff would involve a lot of very expensive, ultra-sophisticated robots. In other words, it'll be a long time before such work is automated.

It appears, then, that routine doesn't necessarily mean automatable. So, when can a task be considered automatable? In other words, what is it likely that we won't be doing in the near future? The Villani report states that a task is automatable when it has the following characteristics:

–no flexibility: the work pace is set by a machine speed and the
   task is regulated by hourly production standards and involves

16. To read the whole article (in french): https://medium.com/willbe-group/extension-du-domaine-de-la-routine-117bfecbdf05 (accessed July 2019).

continually repeating the same series of movements and oper-
ations

–no capacity for adaptation: there is no need to interrupt an
ongoing task to carry out another unscheduled one, and the task
entails a strict application of orders or instructions;

–no capacity for solving problems: when an abnormal situation
arises, the worker calls in other people to solve the problem;

–no social interaction: contact with the public is limited and the
work pace is not set by outside demand.[17]

Which is to say that we'll continue to perform tasks that require
the following:

–cross-cutting cognitive skills (understanding language and num-
bers, ability to solve problems, etc.)

–creative abilities

–social and situational skills (teamwork, independence, etc.)

–precision abilities relating to perception and handling, which
should not be overlooked, such as manual dexterity for example.[18]

This is pretty good news, because thinking, creating, socializing
and using manual dexterity are generally the aspects of our jobs that
we enjoy. The issue, ultimately, is to ensure that we find our place
and are not just performing tasks that can be done by machines.
Ultimately, could our creations actually be encouraging us to be
ourselves?

Rather than fearing that we'll be replaced by machines, we could
be looking instead at happy human–machine collaborations, as illus-
trated by some of our favourite series or films. Who hasn't dreamed
of a relationship like the one described in *K 2000* between Michael
Knight (David Hasselhoff) and his car KITT (Knight Industries Two
Thousand), which has an on-board computer with artificial intelli-
gence? A car that always takes him where he needs to be and always

17. The Villani Report, p.82, https://www.aiforhumanity.fr/pdfs/Mission-
Villani_Report_ENG-VF.pdf (accessed May 2019).

18. Ibid., p.83

gives him good advice. Then, of course, there's *Star Wars*, where Luke Skywalker and his friends are assisted by the famous droids C-3PO and R2-D2. This saga clearly shows that even if, in its own opinion, C-3PO masters six million forms of communication, it's clumsy and incapable of carrying out negotiations with humans. Mastering a language and having good relational skills are two radically different things. On the other hand, Luke, Han and Princess Leia are happy to have R2-D2 around when it comes to avoiding being compressed by a garbage-disposal machine, for example. Lucas's saga shows the virtues of human–machine cooperation.

Returning to real life and our current situation, it's likely that we won't lose our jobs, but that we will have to redesign them to make room for our new technology partners. Looking at it positively, this means that we get to choose the 'portion of the pie' we prefer. It also means, however, that we need to develop a new skill: learning to collaborate with machines.

<p style="text-align:center">*</p>

Learning to collaborate

We should worry about what they still cannot do today,
because we will need the help of the new, intelligent machines
to turn our grandest dreams into reality.
Garry Kasparov, chess champion

How can we collaborate with machines in order to take advantage of the 'best of both worlds', of both human singularity and technological singularity (even if this is still in its early days)? This collaboration needs to be with our best interests in mind, of course. The idea is that we get to keep the parts of our jobs that we prefer and leave machines to do the tasks that they can do better than us or that may not warrant our attention.

In a TED conference, former chess champion Garry Kasparov explains how he experienced his defeat in 1997 against a machine,

IBM DeepBlue, and the lessons he learned from it. His whole perspective rests on the idea that humans need to abandon the old questions of whether we'll remain superior to machines in this or that domain. Firstly, because the probabilities that we'll continue to be superior in any field are pretty slim–and 'Kasparov's personal experience in the matter has convinced him of this. Secondly, because the real issue isn't about comparing ourselves with machines, which, let's not forget, are the product of our imagination, but learning to cooperate with them in order to achieve things we couldn't do without them.

In other words, if we can discover the best way to collaborate with machines, it's likely that each of us–with our own abilities, skills, talents and handicaps–will increase our chances of pursuing our dreams and achieving our goals. This human–robot collaboration has a name: cobotics.[19] The challenge is not to develop better defence mechanisms but to learn to cooperate!

An interesting response is provided by a new kind of chess tournament, first held in 2005, between mixed robot–human teams. This 'freestyle chess' tournament demonstrated the best way for humans and machines to collaborate. In fact, it saw two amateurs using three commercial PC win against a grand chess master assisted by a super-computer specially made for chess![20] According to Kasparaov, who analysed the match, the victory was the result of clever collaboration between the two amateurs and the machine and the way in which they coached it. As he explains: 'a weak human player plus a machine plus a better process is superior … to a strong human player plus a machine and an inferior process'.[21]

This is ultimately one of the key messages of *Terminator 2: Judgment Day*. The film shows how the partnership between

19. For more information: https://www.coboticsworld.com/ (accessed May 2019).

20. For more information: https://en.chessbase.com/post/dark-horse-zacks-wins-freestyle-che-tournament (accessed May 2019).

21. https://www.ted.com/talks/garry_kasparov_don_t_fear_intelligent_machines_ work_with_them?language=fr#t-488203 (accessed May 2019).

teenager John Connor (Edward Furlong) and the old T-800 (Arnold Schwarzenegger) overcomes the very sophisticated T-1000. Connor is amazingly resourceful and confident, but he also understands how to take advantage of the incredible power of the T-800 to do what he alone can't. Complementarity is one of the strengths of their collaboration. It's also by educating the Terminator to make its behaviour compatible with his own that they manage to really benefit from their collaboration. John explains to it that it can't go around killing people all the time (there's Asimov's third law) and, more anecdotally, teaches it some ways and customs that strengthen their partnership. The film is all the more interesting because in the first *Terminator* of 1984, the same T-800 was on a mission to kill John to prevent him from becoming the leader of the rebellion in the foreseeable future. In the second film, having received directives from the future John, it returns to the past to save him.[22] This shows that machines are intrinsically neither good nor bad. They're what we make them, like any instrument. So, again, it's up to us!

While such coaching seems to come naturally enough to Connor, it's normal for us to be asking: who's going to teach us how to train an artificial intelligence, and where do we start?

This issue is central to Laurent Alexandre's book, *La Guerre des Intelligences* (the war of intelligences). The author fears that the gap between those provided with the means to build the life they aspire to and everyone else will become even more pronounced. In his opinion, those he calls 'Montessori children' have nothing to fear because they come from wealthy families, receive a good education and will easily find ways to take advantage of new technologies in general and artificial intelligence in particular. On the other hand, he is concerned that others will be crushed by artificial intelligence. To change the stakes–and avoid the otherwise inevitable widening of the gap–he suggests placing Montessori schools in educational priority areas.

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22. Yes, I know, these back and forths through time are always a bit complicated to follow ...

This issue is both social and political. The solution no doubt lies in developing specific skills that will enable us to take advantage of the available technologies, which in turn will help us thrive.

Drawing inspiration from Emmett Brown

LEARNING TO TAKE ADVANTAGE OF TECHNOLOGY

The way I see it, if you're gonna build a time machine into a car, why not do it with some style?
Dr Emmett Brown, inventor, *Back to the Future*

Let's face it, it's difficult to keep pace with the technological developments that are emerging in various sectors of our society. We often feel like we're straight out of *The Visitors*. Following a succession of incredible events, this film by Jean-Marie Poiré sees two men from the 12th century (played by Jean Reno and Christian Clavier) projected into 1992, where they find themselves confronted with a technological world–with electricity, cars and even simple toilets–that's completely beyond them.

When I see people around me terrified of losing all their photos while doing an iTunes sync or who have no idea what a chatbot is, I tell myself that we risk soon becoming 'visitors' to the future. This gap is often seen as a generational issue, but this assumption is completely false! Admittedly, there clearly is, today, a demarcation between those 'born with the Internet' and everyone else. It's a demarcation fairly similar to that separating those who grew up with smartphones and those who didn't. If you were born with the Internet, sending an e-mail, creating a profile on social media or managing a blog are things you're familiar with and that you don't need to have explained to you. The rest of us had to learn, that's to say adapt to using technologies that didn't exist when we were born. Is this an insurmountable obstacle? No! What matters above all is

that we have a desire to be open to new possibilities and the courage to have a go.

This is well illustrated by Dr Emmett Brown (Christopher Lloyd) in *Back to the Future*. Despite the fact that, in the film, he's in his fifties, 'Doc' is a mad inventor who tries to push the boundaries as far as possible of everything he gets his hands on. This is what he does with a DeLorean DMC-12, turning it into a time-travel machine.

While we might not want to become inventors, the Doc's skills are essential for anyone who wants to make the most of all that technology has to offer.

<center>*</center>

Daring to have a go

A fool on foot goes farther than an intellectual sitting down.
Michel Audiard, scriptwriter

The first skill we need to develop to make the most of the opportunities offered by new technologies is to overcome our natural apprehension and dare to have a go! In fact, there's only one way to learn to use these technologies and that's to try them out. You won't really understand what a virtual-reality headset can do and grasp the possibilities it offers until you put one on your head. Of course, this doesn't prevent those of us who like reading instructions from spending some time on the net reading articles or watching videos to gain a clearer understanding of what's involved.

One of the things that holds us back the most with technology when we want to try doing something on our own, whether updating our operating system or doing a simple backup on a hard drive, is the fear of 'fatal error'. That's to say, we fear that we'll do the wrong thing and that the computer won't start anymore or that we'll lose all the files we were trying to save. While that's certainly possible, current technology is, in general, sufficiently well designed to enable us to retrace our steps and remedy our mistakes.

Moreover, we need to relax and remind ourselves that none of us is immune from the occasional gaffe, whether we're novices or experts. I can claim to know a thing or two when it comes to computers, yet recently I still managed to 'irreversibly' format my MacBook, returning it almost to its factory settings. So, I had to call on help from someone with more expertise than me, who managed to restore it–after several hours of reflection and manipulation–to normal. I'm not wanting simply to comfort or reassure those who've suffered such calamities, but rather to make the point that we're all in pretty much the same boat. The main difference we can make is daring to give it a try and remembering that almost all our mistakes are reversible. Before our next procedure, we could always remind ourselves of Dr Emmett Brown, who steals plutonium to run his time machine and then sends his dog off on its maiden voyage. Clearly, we've a way to go before we're taking risks of that magnitude!

To avoid making mistakes when trying something new, we need to do all we can to safeguard our operations. This means realizing that we constantly need to learn how to use new technologies, products and services, even when we've only just understood how the previous version worked. It may be annoying, but unless we want to remain reliant solely on our current knowledge, we don't have a choice.

When the iPhone X came out and I tried it for the first time, it took me a moment to understand even how to turn it off, because this involved using the existing buttons differently (the central button had disappeared). Taking a picture of the screen or moving applications around was even more complicated. This–unlike the price, which nearly put me off–didn't stop me from buying it, however, because I really wanted to benefit from the new augmented-reality features. A few days later, when my mother asked me to perform some operation or other on her iPhone 7, I'd already forgotten how to do so, because the iPhone X works so differently. So, within a few days, I had to unlearn how to use my iPhone 7 in order to learn to use the X, before having to relearn how to use the earlier version. If this is what's required by a simple smartphone, we can imagine that

we'll have some learning to do if we want to take advantage of more complex technologies such as AI and robots.

Some of my friends went back to the iPhone 7 a few days after trying the X, because the change was too unsettling for them. However, these same friends didn't go back to using Minitel after the advent of the Internet, or a Motorola once smart phones became available. Do we really want to stay in our comfort zones and risk missing out on all the technological opportunities that are available to us? Or will we accept the relative discomfort of innovation and try to ride the wave of progress? At what point do we decide to give up on progress? Is it the moment when we decide to become old?

Ultimately, it's not always the learning itself that's the hardest thing. Maintaining the will to continue to learn throughout our lives may be a much bigger challenge! For a whole host of reasons, society can lead us to believe that progress is no longer for us, that we're too old, that we won't be able to understand, and so on. To fight against this tendency and to maximize our chances of achieving the objectives that are important to us, we need to remain open throughout our lives to the new possibilities offered by technology.

<p style="text-align:center">*</p>

Being open to new possibilities

A mind is like a parachute. It doesn't work if it isn't open.
Frank Zappa, musician

In *Back to the Future,* when the 1955 Marty McFly (Michael J. Fox) is propelled into 1955 and goes to see Dr Emmett Brown to ask him for help (to return to the future), it's clear that the Doc is open to what's supposedly impossible. Even though, when Marty tells him about time travel and other things that were unimaginable in 1955, he raises an eyebrow at first, his curiosity quickly overrides his scepticism. This is the sort of very open attitude we need to develop if we're to take full advantage of technology.

The pianist Herbie Hancock provides a wonderful illustration of someone who's been open to new possibilities all his life. Even as a well-established pianist, having joined the Miles Davis Group in 1963, he never ceased to explore the various possibilities offered by new technologies. He started with a Fender Rhodes and continued experimenting with more and more electronic instruments: Clavinet, Minimoog and other synthesizers. He was also the first to use an Apple computer to compose in the early 1980s. And all that while keeping an eye on the various musical styles that he influenced throughout his life with his creative ability to experiment–soul, jazz fusion, hip-hop, rap, etc.

Herbie Hancock, Miles Davis and all such artists passionate about their art are genuine lifelong researchers, curious about everything and eager to learn, discover, integrate all sorts of new innovations into their work. Startups like Kano help us ease our way into this sort of continuous-exploration approach.[23] The startup provides material in kit form that teaches you how to create your own computer from a few basic components. It also enables you to learn how to code in a fun way, much like playing video games, all while collaborating online with people from dozens of different countries. Kano is primarily aimed at children, but there's no doubt that it can be very useful for their parents, too. In the same vein, workshops offered by French company Colori offer screen-free Montessori-inspired activities, chosen and created to introduce children as young as three years old to technology, coding and logic.[24]

Nicolas Hazard focusses on the underprivileged. Taking as his starting point the observation that thousands of jobs will be created in the coming years around piloting drones (especially for anything to do with delivery), he has created a 'drone university' in Silicon Valley.[25] Over and above its visionary aspect, what's brilliant about

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23. https://kano.me (accessed May 2019).
24. https://www.colori-montessori.com (in French only, accessed May 2019).
25. For more information: https://www.f6s.com/calsocommunityinc1 (accessed May 2019).

the idea is that Hazard plans to give priority to training veterans of Afghanistan and Iraq who've gone from being US soldiers to homeless. There are thousands of such ex-servicemen on the streets of San Francisco and these young veterans, most of whom have flying skills, have almost all found jobs as drone pilots after their 14 weeks of training. This programme meets an economic need as well as providing a social opportunity.

In the same vein, Microsoft opened a new kind of school aimed mainly at the unemployed in Paris in March 2018. It promised that in just over a year and a half of training, learners aged from 19 to 39 would be certified as AI technicians and ready to join the job market.[26] Today, many institutions enable us to get trained in making good use of technologies so that we can not only remain competitive in the job market, but also realize our wildest dreams.

Training aside, we have the opportunity–perhaps even a duty?–to test things, share them with as many people as possible and collect feedback. We can write on the Medium blog platform and share our photographs on Instagram, our videos on YouTube, our drawings on Behance, our musical compositions on SoundCloud, our contacts on LinkedIn, etc., in order to disprove the '1% rule' that states that within any online community, 1 per cent creates the content, 9 per cent contribute (in the form of 'like', 'comment' etc.) and 90 per cent 'consume'–in other words look, listen and observe, but don't create or contribute anything.[27]

Why not start, with a screen to protect us? Admittedly, comments about the content we create can sometimes be very harsh–a screen's also protecting those who write them. Regardless, the main thing is that we do something with the technologies available rather than remain amazed or anxious spectators of the technological developments that are taking place before our eyes. The ultimate goal is that

26. To find out more: https://news.microsoft.com/europe/2018/03/09/preparing-for-the-world-of-tomorrow-microsoft-france-opens-innovative-new-ai-school/ (accessed May 2019).

27. https://en.wikipedia.org/wiki/1%25_rule_(Internet_culture) (accessed May 2019).

we become true 'hackers', able to make technology serve our desires and needs, but more importantly, able to change our habits! Always with the aim of expressing our singularity and becoming self-fulfilled.

<p style="text-align:center">*</p>

Hacking technology ... and our habits

Roads? Where we're going, we don't need roads.
Dr Emmett Brown, inventor, *Back to the Future*

What I mean by hacking, in this context, is changing the original use of a tool into a new one that's not been thought of before.

The term is used not only with regard to diverting the initially planned behaviour of a computer programme. As Sabine Blanc writes in an article for online magazine *Slate*, 'There's the idea of creative hijacking in hacking, and also the implication that you're doing it yourself. First applied to computers, the word eventually spread to other fields. Hacking is akin to an approach, a philosophy of life that can be applied anywhere. Some even consider that Socrates was the first hacker.'[28]

One of the most famous, albeit fictitious, hackers is perhaps Gaston Lagaffe. When this regular office worker, employed by the French comic magazine *Le Journal de Spirou*, turns his office into a radiator by burning charcoal in the filing-cabinet drawers, or turns the stairs into a ski slope, he's hacking his environment–making it more fun or useful–in his eyes at least! What makes this comic strip so funny is that no reader would ever have dreamed up either all these novel misuses or the catastrophes they inevitably generate. Most of all, Gaston Lagaffe likes hacking 'office life', turning the workplace into a kind of giant amusement park.

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28. To read the (French) article from which these comments were translated: http://www.slate.fr/story/76296/hacking-pas-ordinateurs-cuisine-musique
(accessed May 2019).

According to Nouhad Hamam, who presents himself as a 'child creativity hacker', we need to develop the following four skills:

– The ability to generate a flow of ideas from a problem that needs solving: 'when I ask a child to give me all the possible uses of paperclips, this is the skill he uses to reply to my question'.
– The ability to imagine an object in different and novel situations, which he calls 'adaptability': 'this is the skill used by the person who thought of turning an old light bulb into a planter'.
– The ability to offer detailed ideas or to improve existing solutions, which he calls 'improvement': 'this is the skill used when Paul Torrance (a 20th-century American psychologist) asked his young students for their ideas on how a fire engine could be improved and made more fun'.
– The ability to generate unusual ideas and identify new avenues, which he calls 'originality': 'this is the more widespread skill and is usually confused with creativity.'[29]

With this combination of skills, we'll be able to follow the well-established–and beneficial–cycle relating to the emergence of a new technology in our personal or professional lives, namely:

– first of all, we use this technology to continue doing what we're used to doing, but better, i.e. in a more efficient, faster, more economical way
– then, secondly–and only secondly–we question our practices and habits and start to develop new ones thanks to all the possibilities offered by the technology in question.

This cycle is ongoing in the field of human resources. For example, until the middle of the first decade of this century, HR interns in France would spend every summer striving to accommodate the training requests made by company employees during their annual

29. To read the whole article (in French) from Hamam's blog, Hack tes kids: https://medium.com/hack-tes-kids/diy-recr%C3%A9e-les-4-activit%C3%A9s-cr%C3%A9atives-du-summer-pixclub-e9046714402f (accessed July 2019).

appraisals. These requests were recorded on paper by managers following the appraisals. The work of the interns was then to copy them into an Excel file that would be given to the training managers before they completed their training plan and presented it to the social partners. The problem was that this task was so tedious and took so long that, most of the time, the Excel file was not delivered until after the training plan had been presented to the social partners, which meant that employees had to wait a further year before being able to take their desired courses. All of which led to much discontent with the service provided by HR.

Then came HRIS (human resources information systems), which enabled all requests to be exported in an Excel report with a simple click. What had previously taken several interns all summer to do, could now be done in a few seconds: HR managers would finally be deemed efficient. It's appropriate to note that, from a social point of view, this didn't lead to a wave of summer job cuts for HR interns; they were simply given more interesting tasks that made better use of their skills and aspirations.

For a few years, HR continued to use HRIS to do what they were used to doing more efficiently. Then, with all the developments that were occurring in companies, changes in performance and the expectations thus generated, they began to question the evaluation process. Gradually, they incorporated practices from everyday life, namely continuous feedback, into their established processes.

In other words, instead of HR calendars being organized around the big event of annual or biannual appraisals, where a manager would assess–alone–the performance of a managee, everyone was given the possibility to provide feedback on those with whom they'd worked on a project. It's much the same as what we do when we leave a review on TripAdvisor or other such applications. The difference is that, because the company prioritizes confidentiality, feedback given about a person is not made public on their profile. It's clear from this example, then, that annual performance appraisals were first computerized without any major modification (part one of the cycle), then, in a second phase, they were gradually brought into

line with the notion of continuous assessment (part two of the cycle). The most difficult thing in this example was not imagining new uses of HRIS, but adopting new habits, given that the practice of performance appraisals had been around for decades.

So then, making the most of the opportunities offered by technology demands four responses of us. We need to:

–dare to have a go
–be sufficiently flexible and willing to learn, unlearn and relearn
–be open to the new possibilities offered by technology
–manage to create new uses and change our habits.

While this certainly requires us to develop a different mindset and a different relationship with technology, it's clearly worth it, because the benefits go way beyond simply learning to work with machines in order to transform our jobs. Changing our outlook in this way will also have a positive effect on education, work and society as a whole.

Drawing inspiration from Contact

CHANGING THE WAY WE LEARN

The Universe is a pretty big place. If it's just us,
seems like an awful waste of space.
Ellie Arroway, scientist, *Contact*

The first part of this book, on education, focussed on the skills we need to develop, both as children and as adults, in order to be able to fully express our singularity and thrive, particularly in our ideal work. One of the most important is learning how to learn, because this will help us not only to discover our own singularity but also to explore areas where it can flourish.

The previous section focused on learning about the uses of new technologies in order to take full advantage of the possibilities they

offer. The beauty of it is that these new technologies can in turn help us change the way in which we learn.

Contact, directed by Robert Zemeckis, provides a good illustration of how we can learn through technology. Dr Eleanor 'Ellie' Arroway (Jodie Foster) is a scientist specializing in the fields of radio-telecommunication and astronomy. She works with colleagues looking for extraterrestrial radio signals, first at SETI (Search for Extra-Terrestrial Intelligence) and then at the Very Large Array (a radio telescope located on a plain in New Mexico). When she discovers a signal reproducing a sequence of prime numbers, coming from an area a few light-years away from Earth, her research begins to arouse worldwide interest.

After many plot twists, she discovers, thanks to a three-dimensional analysis, that the signal contains a whole series of technical drawings. In fact, these are the plans of a monumental and complex machine: a capsule containing only one person that's released in three gigantic rings in rapid rotation. This strange machine, a construction that is financed by the entire planet, eventually takes Dr Arroway to the extraterrestrials who'd sent the signal, to establish a first contact with them (hence the film's title).

One of the fascinating things about the film is that it provides a great metaphor for our relationship to learning, illustrating particularly well the following cycle:

–Throughout life, we're constantly acquiring new knowledge (especially scientific).
–This knowledge is at the origin of technological innovations (radio telescopes for example).
–We have to learn how to use these inventions in order to explore their possibilities (such as decoding extraterrestrial signals and building a machine to their plans).
–When we know how to use them, these innovations enable us to build new knowledge (thanks to the expedition in the machine to make first contact with the extraterrestrials).
–And the cycle can continue (the extraterrestrial tells Ellie that this was only the first contact of many).

New technologies can thus enable us to learn throughout our lives and access new knowledge.

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Learning throughout life

Science is what the father teaches his son,
technology is what the son teaches his father.
Michel Serres, philosopher

When a journalist asked him, 'How do you continue to study?', American saxophonist and composer Wayne Shorter replied:

As I'm speaking to you, I'm surrounded by scores, by Stravinsky, Beethoven, Arnold Schönberg ... I also have the complete collection of Nat King Cole trios, which have just been released on a label that bears the same name as an album by Art Blakey ... Mosaic! I also have recordings of centuries-old music, Japanese Noh. I don't consider that I'm done with studying. I don't tell myself that I've arrived, that I'm recognized or that I'm a master. Professor Shorter! It's dangerous. It's not over. I'm an eternal student. It's a challenge to stay a student. You have to work on your ego. Your ego needs to allow you to explore less-travelled paths. People are sometimes afraid of the unknown. Because they don't want to take new avenues. They prefer to content themselves with their little knowledge, the little knowledge that allows them to just get by. But we need to be prepared to discover the extent of our ignorance. Faith is about fearing nothing. I have faith in the path I have yet to travel.'[30]

Shorter is an example, as he says himself, of an eternal student. Developing this sort of mindset enables us–among other things–to

30. To read the rest of the article (in French) from which these comments were translated: https://www.letemps.ch/culture/wayne-shorter-suis-un-etudiant-eternel (accessed May 2019).

choose not to simply settle for what we have and not to give up on our dreams! What's to stop us, too, remaining eternal students? Especially now, when we're told that it's possible, thanks to the Internet, to learn everything about anything at any time. But is this assertion true? If we don't know anything about AI and want to understand what it is, will typing 'artificial intelligence' into Google and accessing Wikipedia and other articles dealing with the subject be sufficient for us to learn anything useful? How can we be sure that what we read in these various articles is true? Will this sort of search be enough for us to understand the fundamental difference between machine learning and deep learning? Or the scope of AI, its uses, possibilities and dangers?

There's a big difference between information and knowledge. For the information available to become a source of knowledge, we need at least some sort of support. The Khan Academy provides an interesting solution.

In late 2004, Salman Khan, a multidisciplinary American educator of Indian origin, created an online tutorial using a simple digital notebook in order to help his cousin improve in maths. With more and more requests to access his tutorials, he decided to create a YouTube channel featuring chatty 10-minute videos, aiming to recreate back-of-an-envelope explanations with paper and pencil in hand. This set of tutorials ultimately gave rise to the Khan Academy (a non-profit organisation created in 2006), which includes thousands of online videos and more than a hundred modules in a variety of disciplines that can be evaluated and receives tens of thousands of visits every day.

The Khan Academy, along with major institutions like the Massachusetts Institute of Technology (MIT) and Stanford, which started online courses in 2001 and 2008 respectively, have paved the way for the now-famous online courses accessible to all called MOOCs (Massive Online Open Courses). Next, platforms like OpenClassrooms specialized in information technology, enabling learners to prepare for careers as IT developers, designers and product managers, and even to obtain degrees recognized by companies. And all of this studying

can be done from home. Platforms like this play an important role in the job market because, with demand greater than supply in the IT sector, those with the skills to do such jobs are at a premium.

Conscious of the need to adapt education to the changes generated by AI, professionals are seeking to promote their own solutions. Two Stanford professors, Sebastian Thrun and Andrew Ng, have founded their own online-education startups, called Udacity and Coursera, respectively. Thrun claims that he founded Udacity as an 'antidote to the revolution brought about by AI.' According to Ng, AI researchers are responsible for finding solutions to the problems that can arise as a result of their research. He claims that Coursera is his own such contribution. It's why Thrun talks about an antidote, because the idea is to help people adapt to the changes generated by technology by using this same technology.

A lot of thought is currently going into how digital tutors can be made available to us. We're talking here about smart software that will be able to assist and motivate us in our lifelong learning.[31]

Needless to say, MOOCs complement YouTube and other platforms that host online videos to help us perfect our knowledge in a given area. For example, medical students can now increase their knowledge on Snapchat by following Dr Miami (pseudonym of Michael Salzhauer), a plastic surgeon by profession. He was the first person to use Snapchat in real time during his operations. Many of his hundreds of thousands of followers are medical students, who are learning through these videos.

It's interesting to note that a tool that was originally aimed at teenagers is now becoming a learning device in its own right. Regardless of something's intended use, what matters is what you do with it. These short videos are also very topical, as today we prefer watching short clips at regular intervals, a trend that's known as micro-elearning.

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31. To read the rest of the article from which these comments were translated: https://atelier.bnpparibas/en/life-work/article/education-adapt-ai-induced (accessed May 2019).

Although technologies such as AI require us to continue to learn throughout our lives, they come to our rescue by becoming sources of learning in their own right.

<p style="text-align:center">*</p>

Learning from the technologies

The greatest achievement of humanity is not its works of art, science, or technology, but the recognition of its own dysfunction.
Eckhart Tolle, writer

Changing the way we learn means not only continuing to learn throughout life using the technologies at our disposal, but also benefiting from the knowledge produced by the technologies themselves. This is what is offered by AltSchool, for example, which teaches children from 4 to 14 years old. This project, which was launched by Max Ventilla (a former Google executive) in San Francisco in 2013 and is now becoming established throughout the US, uses technologies to personalize learning. Like the marketing techniques enabling mass customization, where individuals are given the impression that they're being whispered a message no else can hear, why not take advantage of technologies to address each child in a unique and personalized way? To this end, teaching is provided by computers, which makes it possible to deliver courses adapted to the child's speed of learning, their interests, their strengths and weaknesses and their aspirations. This development has the clear aim of helping students grow their areas of strength and find out what they're really good at–in other words, to discover and develop their singularity![32]

But this doesn't mean doing away with teachers. On the contrary. Here, they're called educators, rather than teachers, and are tasked with observing the children's reactions and what they shine at, in

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32. To find out more: https://www.altschool.com/ (accessed May 2019).

order to help them know and understand themselves better and develop their singularity. Thanks to data captured by the education programmes, it's possible to develop the equivalent of 'playlists' for each child, enabling them to benefit from a tailor-made education. Many startups (like Knewton[33]) are now trying to industrialize the personalization of learning, for both children and adults. This is called adaptive learning.

The challenge is to use the data generated by each person–both the results obtained and the pace at which individuals work–to adapt the educational content offered to them. The analyses carried out rely on, for example, the time spent on a questionnaire, the movements of the mouse on the screen, the quality of the answers given to exercises, etc. AI can play a leading role in this area by designing relevant content for each person–as if each student had their own educator.

Likewise, IoT enables us as adults to gain knowledge about ourselves that was previously difficult to access. We often imagine a ton of things about ourselves that are not necessarily true. IoT can have the advantage of bringing us back to reality. For example, we can be convinced that we're clocking up kilometres in our daily lives, with all the running around we're doing, but our smartwatch will tell us whether this is really the case. We may think we're in good shape, but our smart device will confirm this, or otherwise, by collecting data recorded on our last run and by comparing it with the results of other people with similar physical characteristics. And for more fun, our connected kitchen can tell us whether we're really eating as healthily as we think we are! In fact, all our activities and movements can be analysed, even down to brushing our teeth, in order to increase our self-knowledge and so that we can make adjustments to our lifestyles where necessary. This 'personal GPS' can be very useful in preventing us from taking a wrong turn en route towards the objectives we've set ourselves.

Of course, we might consider that a pair of scales and a blood-pressure monitor already provide us with very reliable information, but

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33. To find out more: https://www.knewton.com (accessed May 2019).

the limitation of these sorts of tools is that they record information only when we ask them to. How many of us have weighed ourselves after a workout to convince ourselves we've lost weight so we can congratulate ourselves? But are we as inclined to weigh ourselves after we've over-indulged at a big family gathering? Moreover, unconnected objects don't allow us to compare our results with those of others. Data on its own has no intrinsic meaning. It becomes significant only when compared with other data and put in the context of a goal to be attained.

But all this is very little beside the infinite knowledge that artificial intelligences worldwide are preparing to generate. The strength of AI when it follows a probabilistic or connectionist approach, based on the computing power of the machines and the data available, is that its results are not based on human knowledge (deductive reasoning), but on the knowledge it creates itself (inductive reasoning). Knowledge that's perhaps, or certainly, new to humans. It's like AlphaGo Zero, which learned by playing millions of games against itself without ever having been shown a game played by a human. In fact, this programme develops knowledge that's in no way comparable to that of humans, thus opening up new horizons.

This is precisely what happened in the series of matches between AlphaGo and Lee Sedol. When AlphaGo was leading 1-0 against the Korean champion, the programme made a move, the 37th of the second round, where the probability of a human playing the same move was one in 10,000. At this point in the game, commentators around the world believed that AlphaGo had gone berserk, but in fact, the programme was simply being creative! Lee Sedol was so put off his stride that it took him 12 minutes to make his next move. Later, the champion called this move 'beautiful and original', adding that it would forever change his concept of Go. Proving his point during the fourth round, when he was leading 3-0, on the 78th move, Sedol played what commentators called a 'hand of God' move. Again, the probability of another human playing the same move was one in 10,000. The move so disrupted AlphaGo's game that Sedol won this fourth round.

Operating by induction rather than deduction (which is the case when it's a person who teaches it the deterministic rules it uses in a given area), the AI is able to produce new knowledge and thus help humanity to advance. This makes it of great interest, over and above its significance industrially, economically or in any other way. While determining a machine's operation by teaching it human knowledge is by definition limiting, the thorny issue that arises is the following: what might happen if machines were to produce knowledge to which humans have never had access? This question is clearly one we need to start asking ourselves!

In the near future, we also need to be asking ourselves whether we're prepared for human enhancement if this could increase our chances of realizing our dreams. And if so, what might be the consequences? Before answering these existential questions, we need to understand a little more clearly what this is, in fact, all about.

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Learning to enhance our capacities

Soon chips will be part of your body, implanted under your skin.
You will be your own robot. There's already another world at work.
Everything science can do, it will do.
We're being carried away by dreams of power.
Jean d'Ormesson, writer

A lot of questions are being asked about how new technologies can help us develop our skills, talents and abilities, and they're generating many fantasies, including that of the enhanced human, otherwise known as transhumanism or hybridization.

On Wikipedia, we find the following definition of transhumanism: 'Transhumanism is an international philosophical movement that advocates for the transformation of the human condition by developing and making widely available sophisticated technologies to

greatly enhance human intellect and physiology.' This is what it means to be 'enhanced'. Needless to say, such a movement raises a whole host of ethical, social, societal and political questions.

Laurent Alexandre prefers the term hybridization to enhancement: 'In fact, it will become possible to increase intelligence not by modifying the environment nor by learning, but by intervening either before birth, or directly on the cognitive machine that is the brain. School will then become transhumanist and will consider it normal to modify students' brains using the whole array of NBIC technologies.'[34]

As Alexandre explains, if humanity decides to take prenatal action, we'll be approaching biological eugenics and the improvement of an individual's gene pool. Will we experience what's described in *Gattaca*, Andrew Niccol's sci-fi film, starring Ethan Hawke, Uma Thurman and Jude Law? The film presents a perfect world in which the chances of someone realizing their dream (in this case going into space) depends on their gene pool. The two heroes help each other to try to circumvent the laws of Gattaca, a space research centre, and cover up their respective handicaps so that they can join the space mission.

When Laurent Alexandre mentions hybridization or transhumanism, we're actually perhaps closer to *The Six Million Dollar Man*. In this 1970s American TV series, Colonel Steve Austin (a fictional character–in the series, one of the astronauts who walked on the moon) is involved in a plane crash during a test for NASA. His right arm, his legs and his left eye are seriously wounded and are replaced by bionic prostheses costing six million dollars (hence the series' title). These prostheses increase his performance: he can run faster, see further and lift heavier loads, so he becomes a secret agent. The series tells of his adventures, which become increasingly dangerous.

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34. NBIC is an acronym for the fields of Nanotechnology, Biotechnology, Information Technology and Cognitive Sciences. To read the article (in French) from which these comments have been taken and translated: https://www.lexpress.fr/actualite/sciences/intelligence-l-hommecontre-la-machine_1949520.html (accessed May 2019).

Closer to home, Neil Harbisson was one of the first human beings to be officially recognized as a cyborg.[35] Born with achromatopsia,[36] today, in his own words, he can 'hear colours', thanks to an antenna implanted in his skull, which he has worn since 2004. He can't unplug it and sees it as part of him, which, incidentally, he had difficulty explaining the first time he had to go through customs wearing it: the customs officers asked him to remove it to go through the security gates.

Harbisson has opened the way for a host of questions that we now need to begin to ask ourselves: how far are we prepared to go to increase our capacities or compensate for our handicaps? How many artificial enhancements would it take before we could no longer really be considered human beings? If we pursue Ray Kurzweil's wild dream of being able to store the content of our consciousness in the cloud[37] and then reinject it into another body, would it still be us? *Chappie*, the film by Neill Blomkamp, provides an answer to this question. It portrays an AI in the form of a robot (named Chappie) that tries to transfer its consciousness to another robot when its battery reaches the end of its life. It finally manages to transfer the consciousness of its creator, Dev Patel, into the robot in question, thus maintaining that it's our consciousness that defines us and not the body that houses it. It also raises the question again of what would differentiate us from a machine if it had a conscience?

While we may be unable to provide a theoretical answer to this tricky question, we can at least provide a practical response. We need to consider work as a means of expressing our talents and becoming self-fulfilled, and to see machines as genuine partners that can help us achieve these objectives.

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35. A human being who has received transplants of mechanical or electronic parts.

36. An extreme form of colour blindness, where sufferers see the world entirely in shades of grey.

37. In other words, stored on remote computer server accessible via the Internet.

Drawing inspiration from Chappie

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CHANGING THE WAY WE WORK

The future, always so clear to me, has become like a black highway
at night. We were in uncharted territory now …
making up history as we went along.
Sarah Connor, John's mother, *Terminator 2: Judgment Day*

As we saw in the earlier section looking at the impact of AI on employment, one of the main issues we're soon going to be facing is learning how to work with machines, whether AIs or robots. Again, one of the most symbolic collaborations between a man and a machine is seen in *Terminator 2: Judgment Day*, directed by James Cameron. The machine that was supposed to kill the future saviour of humanity has been transformed into his greatest protector. If that's not a great symbol!

Chappie offers another example of a successful collaboration between robots with weak AI and police officers in the eradication of crime. This partnership reduces the amount of risk taken by the police and enables them to be much more efficient. Needless to say, in the interests of the film's storyline, this perfect understanding comes to an end–as usual.

As for us, our primary goal needs to be to develop the skills that will enable us to take advantage of these new partners so that we can move towards our ideal work and thrive in it. This 'partnership' could occur in one of two ways:

–Because of their efficiency, robots could create increasingly more wealth, meaning that we would no longer have to work to earn money. The sole purpose of work would be to enable us to contribute to the common good (that's the positive version);
–On the other hand, they could perform our current jobs so well that we would need to find other ways to contribute to society and express our talents (that's the more negative version).

It's in the context of a somewhat confused combination of these two perspectives that the proposal for a (universal) basic income (also known as basic income guarantee) has been mooted. The idea is that we would all, regardless of our situation and employment status, receive money each month to meet our basic needs. Basic income is the subject of much controversy. In particular, the following questions have been raised:

–Who would pay for everyone to receive this basic income?
–Would we be able to continue working while receiving this income?
–Would we still need to seek work if we can receive money without doing anything?

In Switzerland, in a referendum held in June 2016, people voted against the implementation of a basic income.[38] An American organization, Give Directly, funded by Silicon Valley giants, has chosen Kenya to set up a unique worldwide experiment. It will provide a universal basic income to a very disadvantaged population for 12 years and observe the results.[39] Another experiment in Kenya a few years earlier had enabled a woman to avoid having to walk 20 kilometres every day to get water, and to train as a baker instead. She finally managed to set up a small bakery and her life radically changed. Many other experiments are underway all over the world, including in the United States, India, Namibia and Kuwait.

The question is this: if new technologies could enable us, one way or another, not to have to work to earn money–doing away with one of the aspects of ikigai–would we still work? And if so, how would we define work?

Joel Mokyr, professor of economics and history at Northwestern University (Illinois, USA) says:

38. To find out more: https://www.bbc.com/news/world-europe-36454060 (accessed May 2019)
39. For more information about Give Directly and this project: https://www.givedirectly.org/basic-income (accessed May 2019).

In the fairly near future, we will basically get rid of boring routine jobs, and in the end only the people who want to work because their work is fulfilling and fun (like my job) will work. Just as nobody sells subway tokens or sorts suitcases anymore, people will do things that, on the whole, are fun. I hope people will not be just playing Pokémon Go. But even if they do (or play some virtual-reality version of it), it beats selling subway tokens.[40]

No longer having to strive to make a living would finally give us the freedom to ask ourselves what we really want to do with our lives; we'd be able to choose work that best suits us at a given time. I sincerely hope that you're convinced, by this stage of reading this book, that it's possible for all of us to find and do work that fulfils us. Nevertheless, the fact that we wouldn't have to earn money would give us more freedom to reflect on the question, without being limited by constraints and responsibilities that can seriously impede the realization of our dreams.

In addition, given that our ideal job changes throughout our lives, we would be able to take the time to think, try out new things, make mistakes and start over, while still being able to pay our rent and have enough to eat. So, the concept of work would be at the intersection of the remaining three aspects of ikigai: what we like doing, what we're good at and what the world needs, with no economic and financial considerations. It would be simply a matter of finding out how we can contribute to society in a unique way that also benefits us, making work a true means to self-fulfilment.

However, we'll need to make a major change in our thinking in order to take full advantage of this situation: we'll need to stop putting limits on our imagination! AI may well be able to help us make this change.

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40. This extract has been taken from an article in the online edition of *The Atlantic*, 'Ask an Economist: How Can Today's College Students Future-Proof Their Careers?' To read the whole article: https://www.theatlantic.com/business/archive/2016/09/how-can-todays-college-students-future-proof-their-careers/499244/ (accessed May 2019).

Making AI our best partner

People are always fearful of something they don't understand.
Deon Wilson, scientist, *Chappie*

One of the major differences between us and AIs (when they're working inductively) is that they reason objectively–which is certainly not true of us. Even when we know what we want and what we're good at, we often hear a little voice whispering 'yes, but you know that's impossible' or 'do you really believe that what you want to do exists?' Let's face it: we often set our own limitations. AIs, however, are not influenced by emotions and thus can offer us a range of possibilities that we might not have thought, or dared dream, of.

In *Chappie*, there's a funny sequence where we see Deon explain to his creation that it must never let others stifle its potential. Indeed, he's developed Chappie's AI so it can paint, write poetry and do other things that usually require human skills. But he's very aware that humans are not prepared to watch a machine engage in activities that supposedly belong to them alone. What limits the potential of AI is not its intrinsic abilities, but rather the fears and apprehensions of its own creators. Rather than being afraid of AI, we would do better to take advantage of its extraordinary potential, which is currently very underused.

When it comes to work, we can get AI to automate the processing of all those emails swamping us and schedule meetings for us (like Julie Desk or x.ai), so that we can feel, for a moment at least, as though we've got our own PA, like any company director. Of course, we mustn't ask too much of them, and especially not to create a relationship with our contacts or to distinguish between important appointments and those that are less so. But all this is evolving very quickly, given the billions of dollars that are being invested by GAFA (Google, Apple, Facebook, Amazon), BATX (Baidu, Alibaba,

Tencent, Xiaomi) and others.[41] You only have to watch the presentation of Google Duplex, a new assistant designed by Google, making an appointment with the hairdresser or booking a table at a popular restaurant.[42]

The real challenge for us is to become a bit like celebrities who have their own agents to look after their interests and ensure that their careers run smoothly. The agent's only objective is to make sure that their client doesn't miss out on the role of a lifetime. We need to use AI in the same way, as a faithful partner who's there for one thing only: to help us find our dream job!

We're not far from this reality, judging from chatbots, which are gradually emerging to serve us in our careers. A chatbot is a computer programme, also known by the names 'interactive agent', 'conversational interface' and others, with which we can talk online via a tool such as Messenger or WhatsApp. These interactive agents are still a long way from technological singularity, because as soon as we 'go off-piste', we realize we're talking to a machine. Tay, the Microsoft chatbot that was made available online on Twitter in 2016 proved this spectacularly: in a single day, eager to learn with its artificial intelligence, this robot with the appearance of a girl managed to make numerous racist, misogynistic and anarchistic remarks. Microsoft finally unplugged it when it started making comments in praise of Hitler.

Nevertheless, progress in this field is promising. The company Jobmaker, created by Frenchwoman Julie Coudry, offers a digital coach that helps users make the right career choices. Assistance offered includes a coaching session that's equivalent to about 15 hours of support. The company VCV offers a recruitment robot powered by an AI to help companies hire more intelligently.[43] In particular,

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41. To find out more about BATX: https://www.innovationiseverywhere. com/webinar-batx-english/ (accessed May 2019).
42. To watch the video presentation: https://www.theverge. com/2018/5/8/17332070/google-assistant-makes-phone-call-demo-du-plex-io-2018 (accessed May 2019).
43. https://vcv.ai (accessed May 2019).

it's able to conduct conversations with candidates using their preferred communication channel to obtain preliminary information about them. The robot can also sort information from thousands of resumés and try to predict the best candidate for a given job, potentially highlighting profiles that might have been ignored by a human, who not only would be unable to deal with as much information as quickly, but would also be liable to preconceptions and prejudices.

The prospect of an AI that could help us make the right career choices or spot us in the ocean of the Internet is really attractive. While companies have the support of an array of partners (recruiters, trainers, consultants, etc.), this is not true of us, simple individuals in search of ourselves. AI could well restore the balance.

Let's not forget that this is exactly what happened with the first digital wave, which for the most part, has had a positive effect on our lives. Glassdoor, Twitter, blogs and other social media have enabled us to find out as much about a company we're interested in as it could learn about us in a recruitment interview. It's no longer possible for a company to be 'economical with the truth', because there's a much higher risk of any lies being discovered. This tends to put the candidate and the recruiter on a more or less equal footing. Obviously, the more sought-after our talents are, the more we'll be playing on equal terms.

This is where we start dreaming of machines that could compensate for our shortcomings and take care of things for us, telling us: 'You'd love to do this or that, but you won't manage it on your own. Don't worry, I'm here to help you.' Freeing us from any sense of determinism, they could help us make changes very quickly.

Discarding determinism

Everyone is a prisoner of their family, their environment,
their profession, their time.
Jean d'Ormesson, writer

One of the problems currently facing the job market is the inconsistency between supply and demand, which is linked in particular to a shortage of certain profiles (in the fields of IT, business, finance, etc.), In France, for example, there's the absurd situation of, on the one hand, some 2.5 million unemployed people unable to find work, and on the other, more than 200,000 jobs left unfilled in 2017.[44] But there's also another problem and it's that matching vacancies with available candidates is almost entirely based on competence. (Such is the case in France, at least; this is less significant elsewhere.) Incidentally, the HRIS mentioned earlier don't represent any real progress in this area because they support existing HR recruitment policy. They enable HR rules to be applied more effectively, but without necessarily questioning or challenging them.

It's now time to start the second cycle of introducing technology into our lives. Remember, to begin with, we do what we're used to doing, but more effectively; only then do we begin to change our customary way of doing things and are really able to benefit from the technology in question.

What AI offers in this area is the opportunity to discard determinism, which is based solely on competence. Or more precisely to extend the definition of competence to what it really is: a combination of knowledge, skill and motivation.

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44. Figure announced on 19 December 2017 at the board meeting of Pôle Emploi (French governmental agency that registers unemployed people and helps them find jobs).

An AI that would help improve the balance between supply and demand, exploring new possibilities that current recruiters generally ignore, could be of interest in placing greater value on motivation than know-how. We all know that it's much easier to help a motivated person acquire the skills they need to be successful in a particular job than it is to try to motivate a skilled person to perform a job they don't want to do!

To reveal someone's motivation, an AI could scan through a multitude of information about a person from the Internet, using their social media profiles and posts, blogs, conversations in focus groups and all their digital footprints. This idea, reminiscent of George Orwell's social science fiction novel *1984*, might well send a shiver down our spines, but we can reassure ourselves with the thought that it's only information we've decided to share. Or so we think …

In any case, it's certain that by following a probabilistic and non-deterministic approach, that's to say by using algorithms it has taught itself without having received any tactics, practice or knowledge from humans, an AI could understand the profile of a person and identify their predisposition for a particular job. It would therefore become possible to find suitable candidates outside of the major universities where recruiters generally do their shopping.

The search for job candidates would also focus more on their future potential than on their past experience. By correlating, for example, the career paths of all the people working in a company with the success they've had in previous jobs, it would be possible for an AI to identify the profiles and career paths, however improbable they may seem, that might be interesting for a particular job. They may discover that a graphic designer would make an excellent sales rep or that a project manager could be a great excellent management accountant, for example. That may make no sense to us, but remember, we're not AIs.

We reason by deduction and are biased in our thinking. If we once hired a philosophy professor for a particular position and it all went wrong, we'd be likely to deduce that philosophy teachers can't do

that job. An AI will never reach such a conclusion based on a single case. On the contrary, it will collate masses of information to reach conclusions that a human would never have thought of. And this is the major strength of AI and what makes it possible to discard determinism!

This is, in any case, the stated goal of the Russian robot Vera, which, to become an expert in recruitment jargon, has learned no less than 13 billion phrases from TV shows, Wikipedia and even job ads. It's capable of picking up a candidate's emotions–whether they're enthusiastic about a particular job or disappointed about the proposed salary, for example.[45]

Of course, we might find ourselves wondering whether these AIs could also be biased?

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Pre-empting deviations

Chappie, if you want to be in the gang you have to be cool, like daddy! Look how daddy walks! ... Need to keep it gangsta' Chappie!
Ninja, gangster, *Chappie*

Obviously, the idyllic picture of an AI helping us in our quest for our ideal job has a setback. The algorithms used by AIs are not objective but subjective, because, let's not forget, they were designed by humans. An algorithm, as Cathy O'Neil reminds us, is not the truth. In a book entitled *Weapons of Math Destruction*, this mathematician points out the potential problems that algorithms can cause in all areas of our lives, while purporting to be based on apparently flawless mathematical models.

Chappie shows how these algorithms that we imagine to be faultless can easily be corrupted by people with bad intentions. Chappie,

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45. To find out more: https://ai.robotvera.com/static/newrobot_en/index.html (accessed May 2019).

a police robot initially designed to protect the population, turns into a real danger to the public when it falls into the hands of criminals wanting to use it in a robbery. Being at the beginning of its life, and thus devoid of all knowledge, it soon picks up the gestures and language of gangsta-rap stars, and adopts behaviour very different from that planned by its creator.

Closer to home, polemics involving AI are already emerging. Two Stanford researchers have designed an artificial intelligence that they believe can determine, from a photo, whether a person is homosexual–work that was immediately deemed controversial. Michal Kosinski and Yilun Wang designed the AI programme from 35,000 photos of 14,000 heterosexual and homosexual men and women gathered from an American dating site. The programme learned by itself without being fed any human knowledge.

The programme contains many biases: firstly, as the two researchers acknowledge, it's very successful when it's introduced to two people, one homosexual and the other heterosexual. On the other hand, its results are far less conclusive when it's asked to identify the 70 homosexuals in a sample of 1,000 people–a proportion that Kosinski and Wang reckon to be consistent with the American population. What's more, the programme has been 'trained' from images of a very specific population, those of young white Americans, and from photos that are far from neutral. In fact, photos used on dating sites are carefully selected, or even photoshopped, to show an image designed to appear attractive, often exaggerating or disguising certain physical characteristics.[46]

This experiment and the controversy surrounding it do show one thing, however: no matter how powerful the proposed algorithms may be, if the data we provide is biased, nothing good will come out of it–or, at least, nothing that will serve the common good!

46. To find out more: https://www.gsb.stanford.edu/faculty-research/publications/deep-neural-networks-are-more-accurate-humans-detecting-sexual (accessed May 2019).

Consequently, it's not hard to understand that all ill-intentioned people would need to control the masses are significant quantities of data to use as raw material for influential applications. When we hear 'data is gold', we should remember that, since time immemorial, data has been, first and foremost, a source of power. We therefore need to be extremely vigilant regarding those who handle big data, because ultimately, they're the ones who control us, often without our knowledge.

But, while the programme described above is extremely questionable from an ethical point of view, its impact would appear to be less dangerous than the one developed by the Israeli startup Faception. On the homepage of the latter's website, we read: 'We reveal personality from facial images at scale to revolutionize how companies, organizations and even robots understand people and dramatically improve public safety, communications, decision-making, and experiences.' The implicitly stated idea is to be able to track down suspects before they've acted. Clearly, we're not far from the reality described in *Minority Report* by Steven Spielberg, in which Tom Cruise tracks 'criminals' who haven't yet committed their crimes.

It should be noted that another of Kosinski's lines of research, which involves defining a Facebook user's personality from their 'likes', also served as a basis for the controversial startup Cambridge Analytica, which claimed to have succeeded in influencing Americans to vote for Donald Trump.

In short, it should be clear that the use of AI and moving away from deterministic approaches are not without potential danger. Nevertheless, while we may be alarmed and disturbed by the controversial excesses mentioned, we should remember that society is far from exempt from this sort of downward spiral. Physiognomy[47] is already present in almost every area of our lives: when we want to get into

47. According to Wikipedia, physiognomy 'is a practice of assessing a person's character or personality from their outer appearance–especially the face'.

a nightclub, rent an apartment, borrow money from the bank, apply for a job, etc. Let's just make sure we don't make the situation worse by wrongly believing that AI is inherently scientific and irreproachable. It remains something created by humans and therefore can lead to the same excesses. We therefore need to be vigilant regarding how we put it to use.

One of the main problems that AI still encounters is the lack of transparency and traceability of the reasoning it uses to get results. As early as the 1970s, this was a concern for doctors who were trying to work with a specialist system like Mycin to detect blood diseases. They couldn't trust the results provided by the system because Mycin was unable to make the line of reasoning it had followed explicit. Forty years later, the problem remains. Even if an AI were to put forward the 'perfect candidate' for a job, a recruiter is unlikely to lend any credence to the result unless they're able to understand what makes this candidate the ideal match for the job. There's no doubt that progress in the traceability of results obtained would enable us to better understand how to use the results provided by AIs as well as to pre-empt possible deviations.

Be that as it may, we currently have an unfortunate tendency to jump to conclusions about whether or not exponential technologies are beneficial or not, without even really knowing what we want to achieve with them collectively. A tool is useful only if we've a clear idea of the objectives we want to achieve. Yet, which of us is able to plainly state the objectives of the society in which we live? While these new technologies could help us thrive individually, we also need to develop a wider perspective that will enable us to make use of them to help us advance collectively.

Drawing inspiration from Arrival

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CHANGING THE WAY WE WORK TOGETHER

A dream you dream alone is only a dream.
A dream you dream together is reality.

John Lennon, dreamer

In order to invent the society of tomorrow, we need to be asking the right questions today! In what sort of society do we want to live? How long do we have before our inventions start moving at a faster pace than our thinking? In France, the Villani report is trying to regulate–in accordance with our great European tradition–future technologies that are likely to shape our behaviour and our expectations. The problem is that these technologies were mostly invented on the other side of the Atlantic, by the 'sorcerer's apprentices' of Silicon Valley, who perhaps trouble themselves less than Europeans do with ethical, political and social reflections. They invent because they can, without questioning whether they should. Although universities like Stanford that have been responsible, directly or indirectly, for generating a wealth of technological innovations, are now trying to include teaching modules on ethics and technology in their curricula. Meanwhile, we Europeans tend to want to regulate innovations we've not created.

Arrival, by Canadian filmmaker Denis Villeneuve, who also directed *Blade Runner 2049* (the sequel to *Blade Runner* by Ridley Scott), may show us the steps we need to take. In the film, we see mysterious extraterrestrial spacecraft appearing all over the Earth, but the aliens' intentions remain unknown. A linguist (played by Amy Adams) tries to ask the right questions to solve the mystery of their presence and their strange messages. The future of humanity will depend on these questions.

Perhaps we need to find a boat in the middle of the Atlantic where we could grapple with the questions that will shape our future:

–What is the place of humankind in the society of tomorrow?

–How can we combine human singularity and technological singularity?

–What ethical, moral and political regulations need to underpin the programming of these technologies?

–Who will make such decisions?

–What roles can we, as ordinary citizens, play in this decision-making process?

–What is the view of the major digital leaders, who alone have enough data to influence the course of our society?

–What power do we have to oppose them?

–Are we really ready to collaborate with rational devices that lack emotion?

–Are we sure that AI and robots can only do automatable tasks?

–And if they can do creative tasks, what will really differentiate us from them?

–Will we one day be living together in a virtual reality?

–And finally, what is the meaning of life?

The answers to these questions could fill hundreds of books, and some of them, such as the last one, have been extensively written about. We might, however, attempt to sow the seeds that could provide food for thought.

<p align="center">*</p>

What place will robots have in our society?

We don't endure the future: we make it.
Georges Bernanos, writer

At present, AI essentially takes the form of 'smart' personal assistants created by Google, Amazon or Apple. Called Google Home, Alexa or Siri, respectively, they aim to simplify life a little, by telling us what the weather will be like tomorrow or giving us the screening

times of the film we want to see at cinemas nearby. We now use our voice rather than our finger to operate our smartphones.[48]

Pepper, a robot the size of a seven-year-old child, can serve as a memory aid for the elderly by memorizing all the conversations it has had with them and answering their questions. Azuma Hikari, meanwhile, keeps single Japanese men company. It's a feminine hologram developed by Gatebox, a Japanese company, whose function, according to the manufacturer, is to be 'an ideal virtual bride'.[49] Admittedly, the adjectives 'virtual' and 'ideal' may seem slightly contradictory, but at a time when over communication and isolation seem, curiously, to coexist, we can sometimes be content with a computer presence.[50] This 'wife' will turn on the lights when you get home from work, tell you what the weather's like outside, and even text you to let you know 'she' misses you a few minutes after you've left home. It's reminiscent of *Her*, Spike Jonze's film in which the character played by Joaquin Phoenix falls in love with his computer operating system (that does, admittedly, speak with Scarlett Johansson's voice).

When these robots become more advanced and can really help us in our everyday lives, what are we going to ask of them? Science fiction films tell us that robots are created to perform a specific function, which they usually do very well. On the other hand, we're not always happy about the fact that they do what we've asked of them, as we can see in *Real Humans*. This Swedish social science fiction series (2012–14) introduces androids called 'hubots' (a contraction of 'humans' and 'robots'), who've become real life partners. These hubots are used as domestic servants, labourers, companions and even as sexual partners (albeit this is prohibited by law).

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48. Hence the term 'digital'–having to do with digits (fingers).

49. For more information: https://www.digitaltrends.com/home/gatebox-azuma-hikari-virtual-assistant-news/ (accessed May 2019). Without repeating the previous chapter, it's clear that ethical questions are emerging. Such an assertion is, to say the least, controversial.

50. Read Sherry Turkle's excellent book published in 2012: *Alone Together: Why We Expect More from Technology and Less from Each Other.*

In the first episode, a grandfather has to replace his broken hubot companion, to which he'd been very attached–indeed, it was his only friend. 'Broken' here means that it almost ran people down in a supermarket car park while driving. His son-in-law buys him a new one and chooses a 'nurse' hubot that will be able to take care of his health. This hubot, which is the spitting image of Mrs Doubt-fire, does exactly what it's been made for–and ends up making the man's life a misery, refusing him all the pleasures the previous hubot used to grant him. It's all for his own good, of course–a nice cup of herbal tea is much better for him than coffee. So, the man goes down to the cellar to reactivate his broken hubot (which he was supposed to have destroyed but decided to keep). The risk, of course, is that this reactivation will generate new catastrophes. The series clearly shows that we prefer, in general, an imperfect model whose behaviour is compatible with our own to a strict model that curtails our freedom.

If AIs and robots follow rational behaviour patterns true to the way they were programmed, the risk is that they'll force us to face up to our inconsistencies and we'll therefore find it difficult to cooperate with them. And who's going to determine the logic they should follow, given that we all have different ways of thinking?

Take the example of self-driving cars and the choices they'll have to make. Imagine that an unforeseen event occurring on the road and that a self-driving car needs to choose between hitting a car containing a mother and her two children or driving into a bus full of elderly people. What is the car's AI going to choose to do? Will it choose to save as many lives as possible? Or will it decide that some lives are more important than others? According to what criteria? And what about us? What would we do? How do we decide what is rational, desirable, ethical or efficient? As we ourselves are unclear on these issues, and have never provided a societal solution, how can we hope to hardwire any sort of rules into these computer programmes?

Hollywood, it seems, has already made its choice: in most disaster films, the hero is ready to sacrifice the whole of humanity to save their own family (as Jackson Curtis, played by John Cusack, does in

2012) or even their dog (as Sylvester Stallone's character, Kit Latura, does in *Daylight*). Perhaps it's time that we addressed these issues, before we start putting robots into mass circulation and open Pandora's box.

<div align="center">*</div>

Should we open Pandora's box?

> *The greatest challenge to any thinker is stating the problem*
> *in a way that will allow a solution.*
> Bertrand Russell, mathematician

While science fiction may well prefer dystopias to utopias, we all too often forget that the catastrophes in these stories are almost always caused by humans deciding to open Pandora's box rather than by robots deciding to rebel.

In episode 4 of *Star Wars*, the famous robot R2-D2 manages to escape because Luke removes its security in order to see Princess Leia's complete message. But it does so not to rebel but simply to carry out the mission that's been entrusted to it. The same is true in *A.I. Artificial Intelligence* by Steven Spielberg (based on an idea by Stanley Kubrick). The film tells the story of a child-robot (played by Haley Joel Osment) that's been given to a couple who believe they've lost their child.[51] This robot is the first of a new generation capable of 'love', provided that this function is activated by its owner. The robot is not simply simulating love, but really feels what it's like to love humans, in this case its 'parents'. Its creator's experiment consists of determining whether a human will be able to truly love the robot in return. Of course, the robot's 'mother' (i.e. its owner) decides to activate this function, having been made aware that this action is irreversible. The child-robot decides it wants to become human so

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51. I say 'believe they've lost' because of what happens in the film, which I invite you to watch rather than giving you a spoiler here.

that its 'mother' will love it more, which is the beginning of all its adventures. The story is not unlike that of Pinocchio.

Closer to home, will IoT eventually lead us to a welfare dictatorship? It's not difficult to imagine the following scenario: our smartwatch detects that our heartbeat is a little faster than usual, so it sends the information to our medical chatbot to find out how to slow it down. Our refrigerator is informed, too, so that it can modify our next shopping order, reducing quantities of anything that might increase our blood pressure (salt and the like). Netflix, which is also alerted, will select comedies and other feel-good films and deselect from our favourites all anxiety-inducing horror films and thrillers. In short, our whole life adapts to the message our smartwatch sent minutes or hours earlier. Welcome to the world of the Internet of Things!

In practical terms, this means that each of us will find ourselves being assigned the services of a sort of life coach. The kind of service that in the past was reserved for world leaders and the very wealthy. This democratization of personalized assistance, from which we can all benefit, can, of course, be seen positively. If we set clear goals for how we want to organize the different areas of our lives, based on our singularity and aspirations, IoT will very probably be able to help us achieve them, or at least make life easier for us and save us energy that we can put to good (or better) use elsewhere.

Nevertheless, we might question the purpose of IoT. Although it's clear that this technology can help prevent and predict many health problems, who's going to decide on the adjustments to be made in our lives based on the information transmitted by the smart devices we're surrounded by? To go back to the heartbeat scenario: will we ourselves programme our fridge so that it knows exactly what to order, when and how? Or will an AI decide what's good for us?

And if this AI considers that stuffing ourselves with chocolate ice cream while watching our favourite TV series on a winter evening isn't good for us, will it stop us getting the ice cream out of the freezer by locking the compartment in which it's stored? And what if, to get around our freezer problem, we decide to order our ice cream via

Uber Eats? Will this application, too, have been alerted and refuse our order? In short, it will be us against 'the AI that wants the best for us'. Does this scenario seem improbable to you? It's perhaps not as unlikely as you might think!

Are we really clear about the sort of life we want to lead and the choices we'll need to make as a consequence? At an individual level, perhaps; but what about collectively? And when technologies such as virtual reality emerge in our society, do we have some sort of committee that would enable us to study the impacts, good or bad, of such technology and to decide on the uses expected and those to avoid?

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Should we ban virtual reality?

What is real? How do you define 'real'? If you're talking about what you can feel, what you can smell, what you can taste and see, then 'real' is simply electrical signals interpreted by your brain.

Morpheus, hacker, *Matrix*

According to Elon Musk, CEO of Tesla and SpaceX, interviewed in 2016 by a journalist for Recode, '… the odds that we're in base reality is 1 in trillions.'[52] Swedish philosopher Nick Boström, meanwhile, stated in the New York Times in 2017 that the chances that we're living in a virtual reality are 20 per cent. What are they talking about? Countless films, from *Total Recall* to *Ready Player One* and *The Matrix* have tackled this tricky question: 'What if we're actually living in a virtual reality while remaining completely unaware of the fact?' Each approaches the subject from a different angle.

In *Total Recall* and in the first episode of Season 1 of the TV series *Philip K. Dick's Electric Dreams*, the characters move, for different

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52. To read this article, visit: https://www.recode.net/2016/6/2/11841020/ elon-musk-existence-video-game (accessed March 2019).

reasons, from our basic reality to virtual reality. In the first case, the aim is to get away and 'take a vacation'; in the second, to solve detective mysteries. In both cases, because of this constant to-ing and fro-ing, the characters end up, after a while, not knowing whether they're in real life or in virtual reality, which causes all sorts of disasters.

Things are even more pernicious in *The Matrix*, where humans are stuck in a kind of bubble in order to power an extraordinary virtual-reality programme known as 'the matrix'. Even those who've become aware that they're living in this matrix enjoy their life there as though it were real. Because what they feel, see, taste and touch is experienced as 'real', as is attested in this famous dialogue from the film, when Agent Smith (Hugo Weaving) and Cypher (Joe Pantoliano) are having dinner together: 'You know, I know this steak doesn't exist. I know that when I put it in my mouth, the Matrix is telling my brain that it is juicy and delicious. After nine years, you know what I realize? Ignorance is bliss.' In other words, if we don't know that we're living in a virtual reality, does it matter whether it's true or not, as long as what we're experiencing gives us pleasure?

Steven Spielberg takes this even further in *Ready Player One* by more or less stating the premise that when you're living a dreary existence, spending most of your time in a reality that invites you to experience extraordinary adventures is a good thing. Parzival, the avatar chosen by the film's hero, explains this about the Oasis, the amazing virtual-reality programme developed by the idolized James Halliday:

'People come to the Oasis for all the things they can do. But they stay because of all the things they can be.' Despite everything, Spielberg questions this premise at the end of the film.

In light of all these films dealing with virtual reality, we can't help but wonder: what's going to happen to this generation that has grown up with virtual reality in the same way that generations X and Y grew up with mobile phones and the Internet? What needs to happen to convince them not to spend most of their time wearing a virtual-reality headset if they're not satisfied by what they're

experiencing in real life? And more worryingly, how can real life satisfy them when they're able to free themselves from all limitations in another reality?

Of course, this is only the negative side of virtual reality. An experiment conducted by American researchers at Duke University on eight patients with physical paralysis for over a year shows a much more positive side of this technology. Virtual reality can actually improve their condition:

Each user was learning to control an avatar in virtual reality. Meanwhile, the brain activity of each patient was recorded and transmitted through electrodes. The result after several months of testing showed real progress. Some patients noted an improvement in their control of their bladder or bowel functions, for example. Miguel Nicolelis, a university researcher in neuroengineering, says that the programme clearly shows that patients who use machines with electrodes connected to the brain for long periods of time present marked improvements not only in their motor skills and bowel functions, but also in their tactile sensations despite the damage to their spinal cord.[53]

This is the prospect depicted in an advertisement for Samsung, which focuses on 'do what you can't', showing that technology can make the impossible possible.[54] Notably, we see a young woman, who's practising walking with a prosthetic leg, fall over and get discouraged, thinking she'll never succeed. The occupational therapist taking care of her then puts a virtual-reality headset on her head that shows her images of herself walking in the water with both her legs (no prosthetic limb). Equipped with the virtual-reality headset, the young woman finally manages to really walk. Neuroscience provides the explanation for this: in fact, the brain doesn't distinguish

53. To read the article (in French) from which this extract was taken and translated: https://www.360natives.com/handicap-vr-17082016 (accessed May 2019).

54. To view this advertisement: https://www.youtube.com/watch?v=lG-CP154Ojy8 (accessed May 2019).

the imaginary from the real, both being translated as a succession of images.

When we see this sort of progress being made in the medical sector thanks to virtual reality, we can't be opposed to the advances that have been made in this field. But this in no way precludes us from questioning the uses we might make of it ourselves now that Oculus Rift and other virtual-reality headsets are becoming afford-able enough for everyone to have access to one. When my mother was young, her father thought she spent too much time listening to the radio. When I was young, my parents warned me about the risks of spending too much time watching TV. Tomorrow, we'll have to explain to our own children that spending too much time in virtual reality is not without consequences.

The answer to these questions about the place of robots, IoT and virtual reality in society will undoubtedly be the subject of many books and doctoral theses. But what interests us here is understanding how these exponential technologies might impact our lives–if not disrupt them. So that we would be encouraged to define a vision of society that will ensure that these technological innovations are made to serve us. And, ultimately, so that we can answer the crucial, but too rarely asked, question: what role do we as humans want to play in the society of tomorrow?

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How can we assert our human singularity in the face of technological singularity?

What is it that makes us human? It's not something you can program.
You can't put it into a chip. It's the strength of the human heart.
The difference between us and machines.
Marcus Wright, *Terminator Salvation*

Ultimately, to resume in a few words what I've said in this book, the challenge for tomorrow's society is to enable us to:

–be truly ourselves and thrive in the work we do, this being the best way to harness our singularity for the common good and for our self-fulfilment

–learn throughout our lives, and particularly learn to collaborate with our future partners, i.e. with exponential technologies (AI, robots, smart devices, etc.)

–answer this essential question for humanity–fundamentally, intrinsically, in view of what defines us as human beings: what role, what place should we reserve for ourselves in society?

The difficulty we currently face in forming an opinion on the impact of exponential technologies on our society, our work and our way of life results from the fact that we have trouble identifying their limits. Some say that technological singularity won't occur for a very long time, others reckon that it's already knocking on our doors. Some have argued that machines will only ever be able to replace us in performing automatable tasks, while others claim that they'll be better even at tasks that until now have required human intuition. And what about notions like intuition, creativity and instinct? Are they solely the domain of us humans? Or could machines, too, demonstrate such capacities some day?

I've long been convinced that the emergence of AI provides a unique opportunity for us to be asking ourselves about our own place in society. It's as though AI has got our backs up against the wall! We've always thought of ourselves as the only beings on Earth with emotions, feelings, intuition, creativity. Although one of the roles of the humanities is to help us understand more clearly the distinctions between emotion and feeling, instinct and intuition, invention and creation, most of us have really only skimmed the surface of these different notions. The time has come to consider the issue more seriously.

Firstly, because AI's astonishing advances in the area of creativity are likely to leave us feeling bewildered. In 2015, French newspaper *Le Monde* reported that a team of German researchers had invented an algorithm capable of creating (or rather reproducing) works

resembling those of Picasso or Van Gogh, simply by analysing the paintings of these great artists. And it could do so in less than an hour! Likewise, a professor of music and IT at the University of California has created a machine, Emily Howell, capable of composing classical music. He 'feeds' the machine with works by Vivaldi that it analyses to identify patterns and rules and then composes its own music in a style similar to that of the composer. The Shimon robot, meanwhile, is able to perform jazz improvisations live, after analysing many improvisations by pianist Thelonious Monk.

In a more popular genre, French researcher François Pachet has developed an AI called Flow Machines, which in 2016 composed *Daddy's Car*, a song the Beatles might well have been proud of. Two years later, Spotify announced Flow Machines first album, which features the Belgian star Stromae, further blurring the boundaries between virtual and real. As does the avatar Lil Miquela, who's 'going out with' one of the band members of Portugal. The Man.

This clearly calls into question the notion of creativity and the idea that it belongs exclusively to humans. But is this really about creativity, artistic skill, imagination, inventiveness? According to Jean-Gabriel Ganascia, an AI expert and researcher at the Paris VI computer lab, all imagination is viewed as the recombination of pre-existing memory elements. Which raises the dreadful question: are we really as creative as we think we are? Could we even be AI alleging to be human? Pop artists around the world claim the legacy of the Beatles or the Rolling Stones, but what sets them apart from Flow Machines or Emily Howell, who listened to the same songs and were inspired by them in the same way? Benjamin Biolay takes on the role of worthy successor to Serge Gainsbourg, but in what way is he more or less creative than an AI?

Rather than judging the creative or inventive nature of these different works, the answer probably lies in the area of emotion and feeling. Surely, a machine can't boast of being capable of something that pertains to the heart rather than the head? Or can it? Once again, can we be sure? Affective computing aims to develop programmes that both recognize and express human emotions–inherently two

different projects. We may well be able to imagine that, through repeatedly studying signs of emotions in our facial expressions and language, a machine might be able to discern human emotions. This is what researcher Raphael Arar, for example, is trying to do in his research laboratory and explains in a TED conference entitled 'How we can teach computers to make sense of our emotions'.[55]

The fact that a machine is capable of generating emotions in us is even more surprising. And yet, we're not far from this. The Institute for Creative Technologies specializes in creating avatars that think and behave like us. It brings together experts in psychology, cognitive science, visual recognition, speech recognition and artificial intelligence. An amazing video shows how people communicating with a kind of virtual psychotherapist (called SimSensei) and seeming genuinely affected by the conversations they have with it.[56] This 'empathy' is achieved through a body-language analysis system, Multisense, which uses their reactions to 'touch on a raw nerve' and arouse emotions.

This raises another awkward question: are our emotional reactions really so predictable or deterministic that a machine could express them? And could it even arouse reciprocal emotions in us, like in Spielberg's *A.I. Artificial Intelligence*? The 'Flesh Flair' scene is intensely emotional and sheds light on the theme of love and robots like no other film. In this sequence, David, the first child-robot ('Mecha'), created to prove that a robot can love, is about to be destroyed in a big, packed stadium to remind the spectators that they can live without all these artificial creations. Just as the fair's host (played by Brendan Gleeson) is about to burn David, he begs for mercy! This casts a chill over the gathering: is David really a Mecha? A woman screams out that a Mecha doesn't usually ask to be saved. And from there, doubt creeps in, empathy grows, compassion rises and

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55. To watch this TED conference: https://www.ted.com/talks/raphael_arar_how_ we_can_teach_computers_to_make_sense_of_our_emotions#t-301776 (accessed May 2019).

56. To watch this video :https://www.youtube.com/watch?v=ejczMs6b1Q4 (accessed May 2019).

the crowd begins to denounce the fair's organizer, who's suddenly deemed inhuman. So, David manages to escape.

The film poses a tricky question: could we feel love for a being that we know isn't human? After all, didn't we love our teddy bears when we were children? Must a being be human for us to love it? If it could show us the love we long for (like the Mecha Gigolo Joe, played by Jude Law in *AI Artificial Intelligence*), could we not love it in return?

If AIs are able to be creative, express emotions and perhaps even love, what place is left for us, and only us, as humans? These are probably the questions for the millennium to come.

SO,
WHO DO YOU WANT TO BE?

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The journey proposed by this book is ending, but it's but the beginning of another journey, of a new adventure for us. The message of this book is childishly simple: indeed, it could be reduced to a single sentence: to give ourselves a chance to be happy, we need to constantly ensure that what we're doing is in keeping with who we are. However, as Leonardo da Vinci allegedly said, 'simplicity is the ultimate sophistication'.

To discover our singularity, we need to radically rethink education, and to focus inwards rather than outwards. Before going out to explore the world, we need to get to know ourselves, otherwise we risk getting lost there. While the current version of school certainly needs to be updated to offer a new form of education, the most important change to be made is in seeing learning–about ourselves and the world–as a path that we travel throughout our lives.

It's a journey we need to prepare for, so that we can take risks without putting ourselves in danger. The greatest of all dangers is that our singularity gets crushed by the tyranny of the norms imposed by society. Our singularity is who we are, but it's also who we want to be. Work, once redefined, could well be the best route to reach our destiny.

If we choose to see it in a positive light, it can be a way for us to achieve, become self-fulfilled and contribute to the common good. Above all, it gives us a chance to have a go, experiment and interact with others, with the aim of discovering and understanding ourselves better. When we were children, we couldn't begin to imagine all that life might hold in store for us. As adults, we need to accept the fact that we may need to wander a bit before we find a place that really suits us. And we should remember that there are different stages in life. Our only GPS should be our well-being: we need to look for the moments when we feel something inside of us coming alive, a burning within us–like when we feel good being around someone. We're talking about the heart here, not the head, because that's what needs to guide our steps.

Unfortunately, no one really teaches us to listen to ourselves. And this is particularly true in business, where, most of the time, we leave our singularity in the cloakroom to don the 'uniform' that our manager, or whoever, expects us to wear. Yet there's no reason why companies couldn't become places of individual and collective fulfil-ment–provided we can align the company's objectives with our own. This means that companies need to be open about their reasons for being, their mission and their goals, which should be clearly stated and shared.

The company would then be a community, a place of social interaction–like society itself but on a smaller scale–making avail-able to those who contribute to it the means to express and prove themselves, which would benefit everyone. These means include the exponential technologies that are gradually emerging in our society: artificial intelligence, robotics, the Internet of Things and virtual reality. Many, today, are fearful that these technologies will crush, replace and eliminate us, yet they're the fruit of our imagination and inventiveness. Why would we've created the instrument of our own destruction?

The challenge we face is to make these new possibilities serve us, individually and collectively. The real problem is that we've no idea of our collective objectives, of the 'society' that we want to build, today

and for the future. What sort of world do we want to live in? And how long will it be before we start recognizing that it's unacceptable to be stepping over homeless people in San Francisco, in the very place where technological innovations are emerging that are supposedly changing our lives for the better? These technologies promise to provide our society with ever greater comfort and well-being, so why don't we ensure that they truly benefit everyone and not just those who are already well off? How long will we go on accepting these inequalities, thinking we can be happy in our own little world with our family and friends?

By what ethical, social and societal rules should these innovations be governed? Who will define them? Here again, we can become weighed down by the lack of world rulings on these issues. Living together in harmony is still a long way off. Yet now more than ever, it remains the central issue facing our society. Even more fundamentally, what place should we occupy within it? What ultimately distinguishes us from machines and ensures that we can contribute in a unique way to the common good?

If technological singularity emerges one day–which will probably happen sooner rather than later–and machines display creativity and emotions, how will we be able to unequivocally assert the borderline between humans and machines?

Throughout the ages, humans have sought to understand the meaning of life and their true nature. Whether we're into mindfulness, like Thich Nhat Hanh, or quantum information fields, like Hubert Reeves, there are many spiritual, scientific and mystical movements that would have us believe that there's a 'superior intelligence', that the fundamental purpose of our lives is to connect our individual consciousness to this great oneness. Could this be the key that would enable us to affirm what makes us different from machines?

Whether it's about leading our lives based on this mindfulness or living from our heart, the key to our future probably lies in paying more attention to each other and to ourselves. We need to relegate machines to the place they deserve: fabulous instruments that can

make our life easier, support our objectives and maybe even, one day, make us 'immortals', as advances in biotechnology would suggest.

But even if our lives were to last for a thousand years rather than a hundred, they would be worth living only if we're clear and comfortable with our singularity, with what makes us unique! So, who do you want to be?

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A book is an adventure: long, tricky, sometimes painful, but strewn with those special moments of grace, of brilliance, that make it worth having spent a year or more of one's life on it. This book has been an adventure I've shared with others, without whom it would've been all too easy to get lost in the jungle of my thoughts. Others who were there at times of doubt, but also for all those times of joy and hope that I wanted to share. These others, whom I thank from the bottom of my heart, are as follows:

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After a PhD in artificial intelligence, and research on the functioning of intelligence, **Alexandre Pachulski** decided to use his expertise to serve companies and ran a management consulting firm for 8 years. In 2007, he co-founded the startup Talentsoft, which currently employs 600 people, serves 10 million users and offers talent-management software to companies. Believing that education and the innovative use of technology can change the world, he continued on this course by participating in the creation of L'Autre École, with the aim of encouraging the emergence of children's talents. He also hosts a YouTube channel (Talents of tomorrow) and a blog (lestalentsdalex.com) devoted to different ways in which we can cultivate our singularity in the rapidly changing workplace.