Bollettino

GENERALI

EMPATHY — Long live the digital revolution, provided that society and businesses maintain an analogic and human approach.

1–19

Bollettino

GENERALI

Generali Group Magazine since 1893

The strength that brings people closer

by Simone Bemporad
– Editor in Chief

According to the American economist and writer Jeremy Rifkin, modern man is naturally predisposed to empathy, understood as the ability to place oneself in the shoes of another and to understand their psychological process. Empathy is not a trick or a technique; it's an inherent characteristic of human beings. Violence, egotism and narcissism are by-products of an unfortunately all-too-common dearth of willingness to see things from another's perspective.

It is not our intention to analyse the merits of the informed conclusions reached by Rifkin and other researchers; we did however feel that these pages could provide a valuable place to reflect on one of the core pillars of Generali's approach. The Group's aim is to become a life-time partner for its clients. Talk is cheap; turning words into action necessitates a significant shift in corporate culture and a change in organisational approach at this place that we have dedicated ourselves to for so long.

The key is to put the individual at the heart of the project and of the narrative. Our clients are the protagonists, but so are the over 200,000 women and men who dedicate themselves to meeting their needs, step by step and holding high the symbol of the Lion. Empathy is the tool.

The Group's aim is to become a life-time partner for its clients

The Group always aims to put itself in the client's situation, offering a human touch, fostering a team spirit, recognising people's worth, listening to them, looking after them and showing them the kind of respect that gives Generali a competitive advantage in the market. Besides, this is what we mean by sustainability: making Generali stronger, taking into account the long-term interests of all the people we deal with on a daily basis.

The key is to put the individual at the heart of the project and of the narrative

Empathy is the central theme of this issue, with articles and interviews with people both inside and outside our community. Furthermore, in the spirit of the new look of the Bollettino, which recently garnered international recognition in three categories in the prestigious Hermes Creative Awards 2019, we have decided to employ a new narrative language in our discussions on empathy. This issue opens with illustrations by Nicola Ferrarese, co-director of the Treviso Comic Book Festival. The gentle, ironic humour of his tables on our cover page serves as the ideal introduction to the articles in this issue. This is a less conventional portrayal of Generali, one that's more... what's the word? Empathetic.

Index

Could you draw empathy?

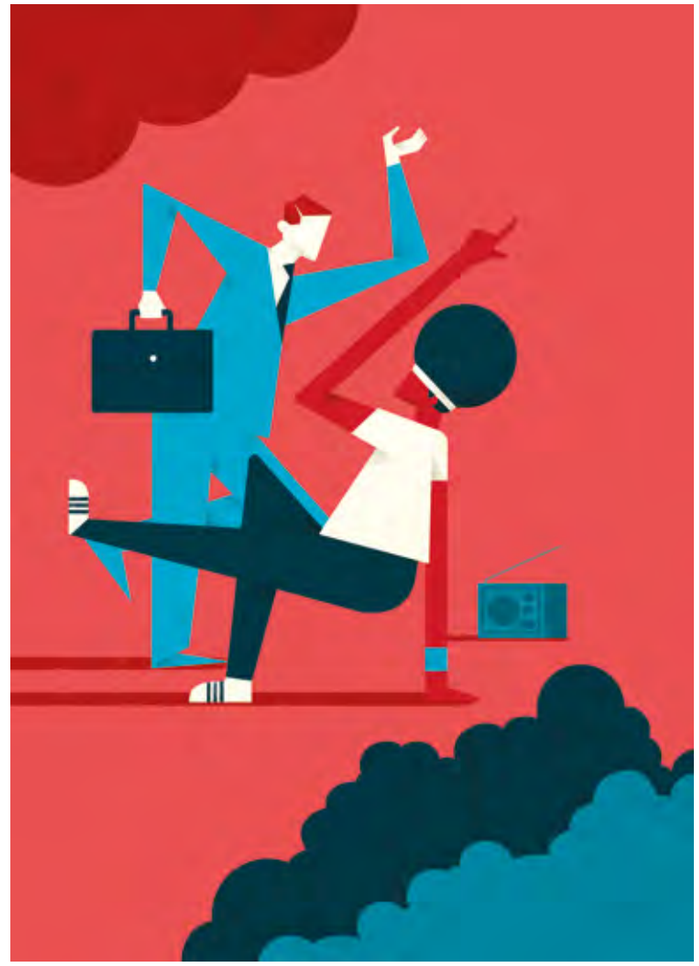
text by Alessandra Gambino
illustrations by Nicola Ferrarese

When explaining a concept, we always rely heavily on words. On occasion we add gestures to those words, giving a physical form to the empathy we are trying to convey with our concept. The power of an image can also provide a source of inspiration: its impact is sharp, immediate.
It can be another language to use to communicate with people whose mental processes work better with media like icons, graphic elements, photographs and illustrations.

This gallery marks the start of a new editorial feature in the Bollettino, one that will accompany us on our journey towards new ways to communicate our empathy. The narrative voice here speaks in a different form and seeks out new conversational partners to share the responsibility and pride of telling a story to an ever-expanding audience.

The images in this collection provide a new perspective on the topics covered in our cover story through the conceptual and narrative vision of Nicola Ferrarese. The gentle humour of his illustrations as seen on our cover page invites us to dive into the articles in the pages of this magazine.

The cover illustration for this issue of the Bollettino, entitled 'a New Era of Empathy', created by Nicola Ferrarese.



Nicola Ferrarese

"I live and work in Treviso (Italy) as a freelance illustrator. My works involves different techniques, such as digital illustrations, murals, and custom typography but actually I am focusing on conceptual and narrative illustrations for the publishing market. I have been the co-managing Director of the Treviso Comic Book Festival since 2009: an international event on the comics culture annually held in Treviso during the last week of September."

A human touch is warmly welcomed

If all it achieves is reducing competition to a race to reduce prices, technology runs the risk of transforming products into mere commodities. The opportunities lie in the rich and profound experiences that human relations are able to offer the consumer. Innovation is part of this.

Natural and artificial empathy

We all feel and experience empathy for ourselves. Now, science has developed an ability to see, quantify and manipulate it. It has discovered that empathy is something that can be induced in people. That empathy can also be felt towards machines. And that we are not the only beings to feel these emotions.

Embracing our own natural resource

We are increasingly isolated in a digital world that provides only superficial satisfaction, while slowly increasing our levels of anxiety and stress. Yet we possess a natural strength that enables us to escape from this vicious cycle. That strength is empathy, which reminds us of the value of collaboration and solidarity.

The city speaks, if we're willing to listen

Empathy is not only a bond that brings two people together. It's a dialogue between the individual and their surroundings, one which allows them to seize moments and events of profound communicative value. This ability to start a conversation between people and places requires people to take a step back, relinquishing their position of dominance to give space to their surroundings.

A map to find the customer

Empathy is an innate gift, but it is also something we can cultivate and learn to master through application and practice. We can then use this to improve our understanding of others and how they think and dream. By doing so, it then becomes easier to offer them what they need.

Communicate with robots as robots

From simple blenders to virtual assistants, we all communicate with machines on a daily basis — albeit in different ways. And yet we still find this dialogue difficult, unnatural, stressful. This may be because we attempt to communicate with machines as if they were people. What if the solution was to accept them for what they are: simply machines?

The race for artificial intelligence is on

Mastering artificial intelligence has become as valuable as possessing natural resources, launching a race for innovation and leadership in that sector. The Asian economies are leading the way and advancing at a rapid pace. But in all this rush, who's looking out for humanity?

Let’s play at being a tree

The evolution of video games, and especially virtual reality ones, allows us to immerse ourselves in a vast array of situations, which can lead to emotional problems. However, there are also positive outcomes: to take one example, a device that increases our empathy towards a plant teaches us to take care of the environment surrounding us.

The Human Touch

FIFA Women's World Cup Final: Rear view of USA players victorious, greeting and kissing family members after winning game vs Netherlands at Parc Olympique Lyonnais

GETTY IMAGES / SIMON BRUTY

In this age of widely accessible technological innovation, it is vital for companies to invest in people. A web guru explains why.

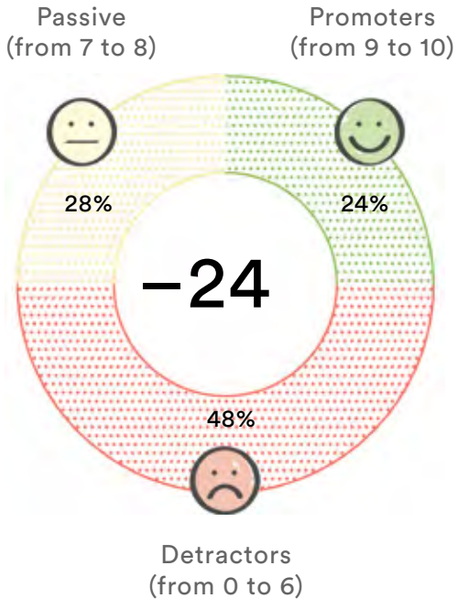
by Tariq Valente
– Global Head of Business Development at Surfly

I confess that I love technology and what we humans can achieve with it, but I'm not talking about technology today, as I believe that technological disruption and fierce competition is a risk for the insurance industry because it may make it a commodity. And as soon as insurance is a commodity, competition becomes all about price, turning it into a race to the bottom where everyone will lose – including the customer.

Remember when coffee was a commodity product? You could buy it everywhere and at a low price. Then Starbucks came along with their many different coffee flavours and happy baristas that brighten up your day with a smile and hot coffee. They re-imagined the coffee experience, even if the price is higher now and they spell your name wrong on the cup.

↑ Over
Aesop consultant Rachael Rendon, right, helps customer Purva Merchant, visiting from Seattle, test a product in Aesop's new store on Abbott Kinney Blvd. in Venice. The brand does no advertising - only word of mouth - and is very high-brow, promoting culture and artisanship; each store has a different design and they work with local architects.

Life insurance industry
Net Promote Score



The NPS is calculated based on responses to a single question: **How likely is it that you would recommend our company/product/ service to a friend or colleague?**

The scoring for this answer is most often based on a 0 to 10 scale. Those who respond with a score of 9 to 10 are called Promoters, those who respond with a score of 0 to 6 are labeled Detractors. Responses of 7 and 8 are labeled Passives, and their behavior falls between Promoters and Detractors.

Source: Siegel & Weber consumer survey, October 2018

The Human Touch in Insurance

Generali understands the importance of differentiating itself by focusing on the customer. In November of last year, 'Generali 2021' was announced, in which the Group's CEO, Philippe Donnet, outlined Generali's vision 'to become a lifetime partner to customers'. This more human focus is very important for every brand in today's world, where technology is widely accessible. It is easy to lose sight of what is really important when you see the press repeating the same stories over and over again: AI, blockchains, data. While data and technology are important, the value lies in the human touch, and it's the brands that stay human that will stay relevant.

By its very nature, insurance has a human and noble purpose – that is, to serve and protect people. If you think about it, insurance agents, brokers and advisors are like superheroes in many ways: they help people make the right decision, they offer peace of mind, they care for their customers and help them get back on their feet after a loss or injury. People play a massive part in the overall insurance experience. At Davos last year, Alibaba's visionary founder, Jack Ma, made an inspirational speech in which he asserted that 'we need to be teaching our children about values, believing in what they are doing, independent thinking, teamwork, caring for others...these are what we call soft skills. We must teach them the skills that distinguish us from machines.' We should not only be teaching our children these softer

> 'We should teach our children 'soft skills', those abilities that separate people from machines'
>
> Jack Ma

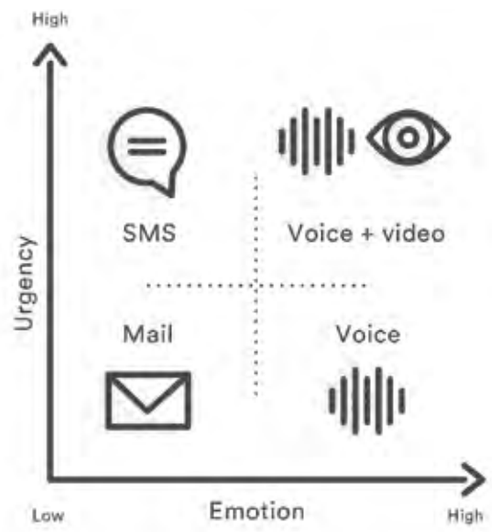
skills for the future, but we should be constantly developing our superhero insurance advisors, as well as empowering them with the right tools, so that they can provide a more human touch, make every interaction count and create experiences that make customers go WOW!

However, the big picture in insurance is not so WOW! A recent survey from Siegel & Weber on the life insurance industry showed that it had a -24 NPS (Net Promoter Score), meaning it has more detractors than promoters. There clearly needs to be more of a focus on becoming the customer's trusted partner in life insurance. Siegel & Weber suggest that a guiding technology principle 'should be carefully enhancing the emotional bond between consumers and insurers, rather than letting relationships become more brittle as new technologies come online.' When closing a sale on a life insurance policy, it is important to explain the benefits in a personal and human manner. It is not just a box to be ticked but peace of mind that you are offering.

Generali already has a great NPS Program, but in order to help further improve its NPS, Generali's Country Manager for Italy and Manager of Global Business Lines, Marco Sesana,

When it comes to high-emotion scenarios, no AI can replicate human empathy

All customer service interactions are on a spectrum that has two axes: emotion and urgency. Each channel can be viewed from the standpoint of those two axes and placed on a quadrant like this one.



Source: www.forbes.com

plans to evolve the Group's business model to 'increase the frequency of human contact and quality of advisory services, which will lead to increased customer satisfaction, higher retention and loyalty.'

Current research from PointSource found that about half the population prefers talking to a human when they need customer service. As AI becomes more sophisticated, what is important to consider is the overall experience and how we design these technologies in the first place.

> The guiding principle of insurers should be to invest in strengthening the emotional bond with their customers

In a Forbes article, 'Will AI Replace Humans in the Customer Service Industry?', the author placed customer needs on a spectrum of emotion and urgency. If a customer feels that something very important is at stake (i.e. their home, family, car or life), or feels unhappy with the service provided, the customer prefers to interact with someone showing empathy. We need to understand that humans are the differentiator and can help turn frustrated or confused customers into real fans. In order to do this, 'insurance brands must not box up their agents or advisors within their own universe but allow them to go beyond expectations to create strong moments of truth and deliver the ultimate insurance experience.'

The Experience Economy

We are living in the experience economy, where 'a company intentionally uses services as the stage, and goods as props, to engage individual customers in a way that creates a memorable event' (Harvard Business Review). In the experience economy, the customer is the

If you've ever stepped into a Trader Joe's, you'll understand what Forbes refers to as the 'overall uplifting effect' that creates the foundation of this company's delightful customer service. How do they do it? In part, by 'disrupting' our typical idea of grocery stores. Instead of a neutral color scheme and harsh lighting, Trader Joe's layers on color and texture in their décor. In addition, their hiring practices focus on staffing up with people who authentically are excited to engage with customers about the brand. Writes Forbes, 'There's nothing robotic or scripted about the transaction…Authenticity is something you can feel – it's crucial to the buzz.'

→ Right
Banana stand in Trader Joe's, Philadelphia.

↘ Next
The offices of Zappos in Las Vegas, Nevada. Zappos, the largest online footwear business in the world, placed a high emphasis on the layout of the cubicles in its offices, going so far as to encourage every employee to personalise his or her workspace with decorations, toys and gadgets.

ALAMY / BIOKANE

FLICKR / TECH COCKTAIL

GETTY IMAGES / NICHOLAS KAMM

↑ Above
A sign seen on the door of a Sephora store in Washington DC, on June 5, 2019.
Cosmetics powerhouse Sephora closed all its US stores, distribution centers and corporate office for an hour-long employee training session just weeks after a racial profiling incident involving Grammy-nominated singer SZA. The black R&B star tweeted just over a month ago that staff in one of the beauty chain's California shops called security on her.

innovator. Technology is merely an enabler. Do you ever say, 'booking that Uber or Airbnb through their app was a great experience'? Probably not, unless it's your first time. This becomes expected from the technology. You do, however, tell people about the Uber driver that helped you get you to your best friend's birthday party just in time (by driving like Lewis Hamilton in the Italian Grand Prix) and made you laugh with all of their silly jokes on the way. Or that Airbnb host who gave you a warm welcome to your flat in Amsterdam, clean towels and sheets on the bed, shared some great history about the city and told you where to get the best pancakes for breakfast after a crazy night out – so you keep the memories, share the experience with others and leave a great online review. One thing stands out in these examples: the human touch has a big part to play in the experience. Today, many companies have shifted their focus towards improving the customer experience. Why? Because fierce competition is making it very difficult to compete on product, process and price. Even the vision of the world's biggest technology brand, Amazon, is to 'be Earth's most customer-centric company.' What you can already see

> Even Amazon's corporate vision is 'to be Earth's most customer-center company'

happening in online retail is that many shops offer similar products and prices with an almost identical buying process. Now more than ever, it is important to differentiate and invest in the relationship with your client. The lack of an emotional human connection makes it all too easy for your client to simply leave and never come back.

Long gone are the days that we simply make a purchase and that's the end of it. Whether we realize it or not, we seek, and often expect, more value or function from the brands that we love and use. We don't just want the products or services, but we want an overall experience as the icing on the cake – something memorable, something we can connect with, something that makes us feel less like a

Tariq Valente

Tariq Valente built his foundations in the tech space just under a decade ago, evangelising the Open API vision to executives with Apigee and helping drive them to an IPO and Google acquisition. Since then, he has assisted business and technology leaders in making their brands more customer-centred. He has a wealth of experience advising big brands around a wide range of solutions including CRM, contact centres, digital channels, social media, online communities, NPS and more.
Surfly provides a simple, fast and secure universal co-browsing solution (with video chat) that empowers over 100,000 agents and advisors at leading insurance brands around the world. Surfly helps these brands to build trustful relationships, create WOW! moments of truth, improve operational/claims efficiency, drive sales/broker distribution and turn customers into real fans.

If you would like to learn more, you can reach Tariq at tariq@surfly.com

sack of money and more like a fellow human.

Yes, we are selling insurance products, but what else can we offer our customers? Can we fulfil a need they did not express, or maybe even one they didn't know they had, somewhere within their interaction with the brand?

Exceeding Expectations

As we move further into the experience economy, it is important to recognize that expectations are changing rapidly. You'll need to find new ways to exceed these expectations and provide additional value, which is exactly what is happening in insurance right now. This is also reflected in the Generali 2021 vision. Isabelle Conner, the Generali Group's Chief Marketing and Customer Officer, recently pinpointed that part of the strategy is 'to be proactive and relationship-based to integrate protection, prevention and assistance services tailored to customer needs.'

So, how can we create this ultimate customer experience in insurance? How can we make each interaction remarkable and something people want to share? How do we go beyond our customers' expectations?

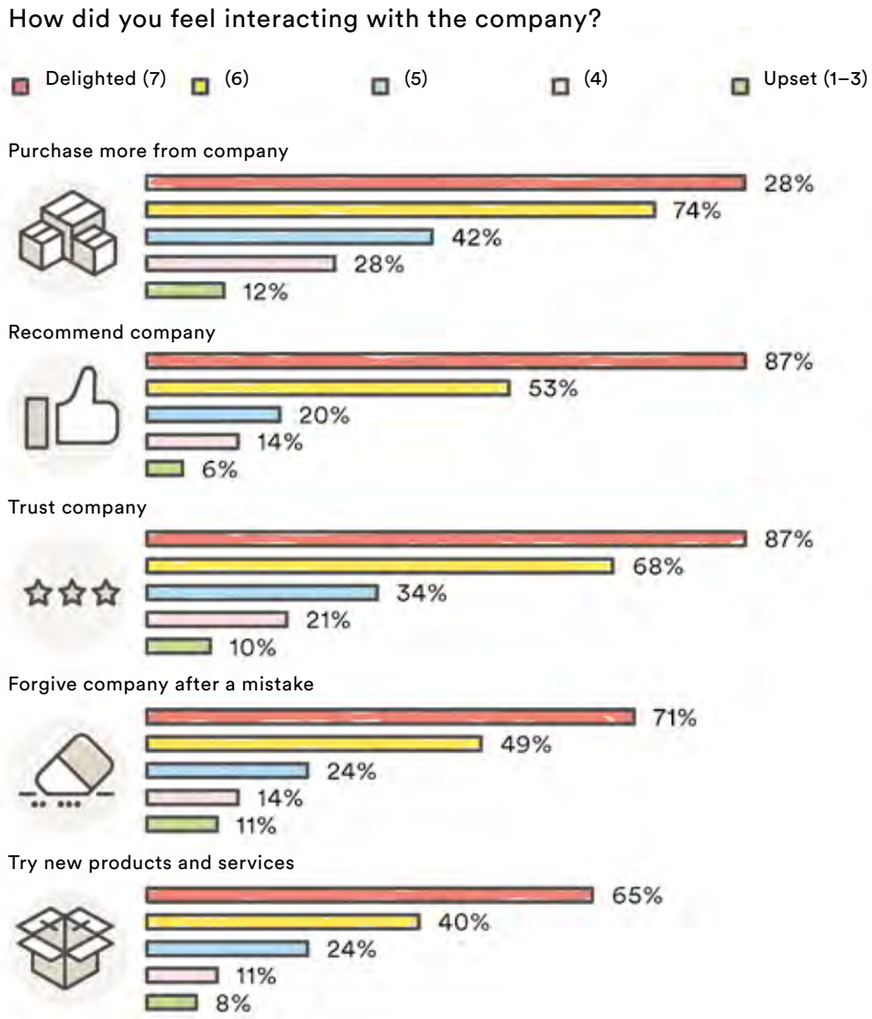
Focus on the relationship, not the transaction

Over the last couple of decades, the Internet has transformed how customers interact with businesses. Suddenly, it was possible to do many things yourself. With the Internet, you could book your flight online, sell your house online and even transfer money online. At the same time, the role of contact centres changed to a strong emphasis on metrics like average call time and time to resolution, neither of which were customer-centred. These performance metrics often led to company representatives operating in a solely task-focused manner, which reduced both their work satisfaction and their motivation to help customers – yielding rushed and impersonal interactions.

In today's world, people generally expect everything to work. You can, however, exceed their expectations by working alongside them to achieve their goals or solve their problems. In an industry like insurance, in which the customers do not necessarily want much frequent contact, what you need to realise is that 'it isn't all about counting the interactions but making the interactions count.'

> What matters is not the quantity of interactions, but their quality

Let's imagine that the customer of a motor insurance company breaks down whilst driving the children to school and is not sure whether their insurance policy will cover the damage. The kids are crying in the back of the car and the customer hasn't had their coffee yet, so of course they are stressed. In certain instances, it is critical to connect the customer with a human agent, one equipped with the right skills and tools, to not only effectively diagnose the problem but also to be there for that customer, empathize with them and help them at a stressful time. Now, let's stretch the imagination further and imagine that, during that



Consumer sentiment

This diagram illustrates that customers are 15.1 times more likely to recommend a company and 7.8 times more likely to make additional purchases from the same company following a positive emotional experience.

Source: Temkin Group Q1 2016 Consumer Benchmark Study.

same interaction, the agent can go a step further and immediately help by calling a tow truck for repairs and arranging a rental car to be delivered to the customer in need – that's a WOW!

It is important to provide agents with tools that help them to instantly understand problems and explain solutions in a personalised, easy and visual way. One such tool that leading insurers are implementing is co-browsing, which helps advisors to collaborate and visually engage with customers. Not only are tools like this important, as 65% of us are visual thinkers, but according to Forrester, companies increasingly leverage visual engagement to cut through the conversational clutter, to be better understood and to connect emotionally. Another challenge is to increase that emotional connection with customers, because in a crowded marketplace, where products start to look the same, it is the feeling generated by the service experience that will help brands to differentiate. The human touch is essential for this.

Alessandro Donetti, a senior advisor on customer-centric transformation and a lecturer at the Politecnico di Milano, mentioned in a recent post how he applied the Pleasure Paradox in a project with an Italian luxury fashion brand. He measured a jump in the consumer's emotional experience that exceeded 50 percent and consequently a growth in sales per ticket of more than 25 percent and a 3x NPS boost. The Pleasure Paradox is, according to researchers from Harvard University

> Around half of the population prefers to interact with a human being when contacting customer services

ALAMY / JIM WEST

Southwest Airlines is the USA's largest carrier by domestic passengers, counts millions of followers on Facebook and Twitter and outspends rivals on advertising. Yet the airline and its quirky ways – no assigned seats, two free checked bags and the occasional flight attendant-turned-comedian, among others – still manage to regularly confound travelers.

↓ Under
A Southwest Airlines gate agent on Halloween at Detroit Metro Airport.

Speaking of disrupters, TD Bank stole the cake in terms of delivering a surprising, disruptive experience to customers with their #TDThanksYou campaign. On a single day in 2014, every customer accessing TD's Canada Trust branches at a given point during the day received a surprise bonus in the form of $20. While this gesture already ratchets their customer experience up a few notches, the real success came from the related video they circulated, which went viral. TD had already established a solid brand attribute of accessibility in 2009, when it rebranded itself as the most 'convenient bank.' The takeaway? Surprise-and-delight disruptions are made even more impactful when you've already established your customer experience differentiators.

↓ Under
TD Bank, Chelsea, New York.

ALAMY / RICHARD B. LEVINE

and the University of Virginia, that 'people have a much higher level of positive emotional experience due to an act of kindness performed for a reason they do not understand, compared with an act for which they understand the reason.' Alessandro argues that big data is the wrong approach to delighting customers and that the surprise factor plays a big part in customer acquisition and loyalty.

Insurance is a relationship business: trust is everything

These days, not everyone trusts everything that they see online. I wrote my master's thesis, many moons ago, on the topic of trust, which I see as the truest form of currency in society. Individuals gravitate towards people and companies that they can trust, and trust is driven by empathy and understanding. Isabelle Conner mentions that there is a big untapped opportunity to deepen the relationships between the 57 million existing Generali customers worldwide. In order to do this, there has to be 'a combination of simplicity and innovation with empathy and care'.

So, the big question is, how can we deepen these relationships through trust and the human touch? We need to forge relationships in which your clients not only fully understand what you are saying but also believe and empathise with what you are saying. Relationships where every interaction is remarkable and something that people want to share.

'Effective engagement is inspired by the empathy that develops simply by being human.' (Brian Solis)

EMPATechnology

REUTERS / ARND WIEGMANN

Empathy is regarded as one of the most sought after traits in humans. We want it in our partners, our doctors, our friends and our colleagues. But can we get it from non-humans?

by Moran Cerf

Empathy is often seen as a human attribute, and a positive one. We value empathetic individuals who understand us and relate to us, and we tend to reward high empathy in societal contexts like politics and business.

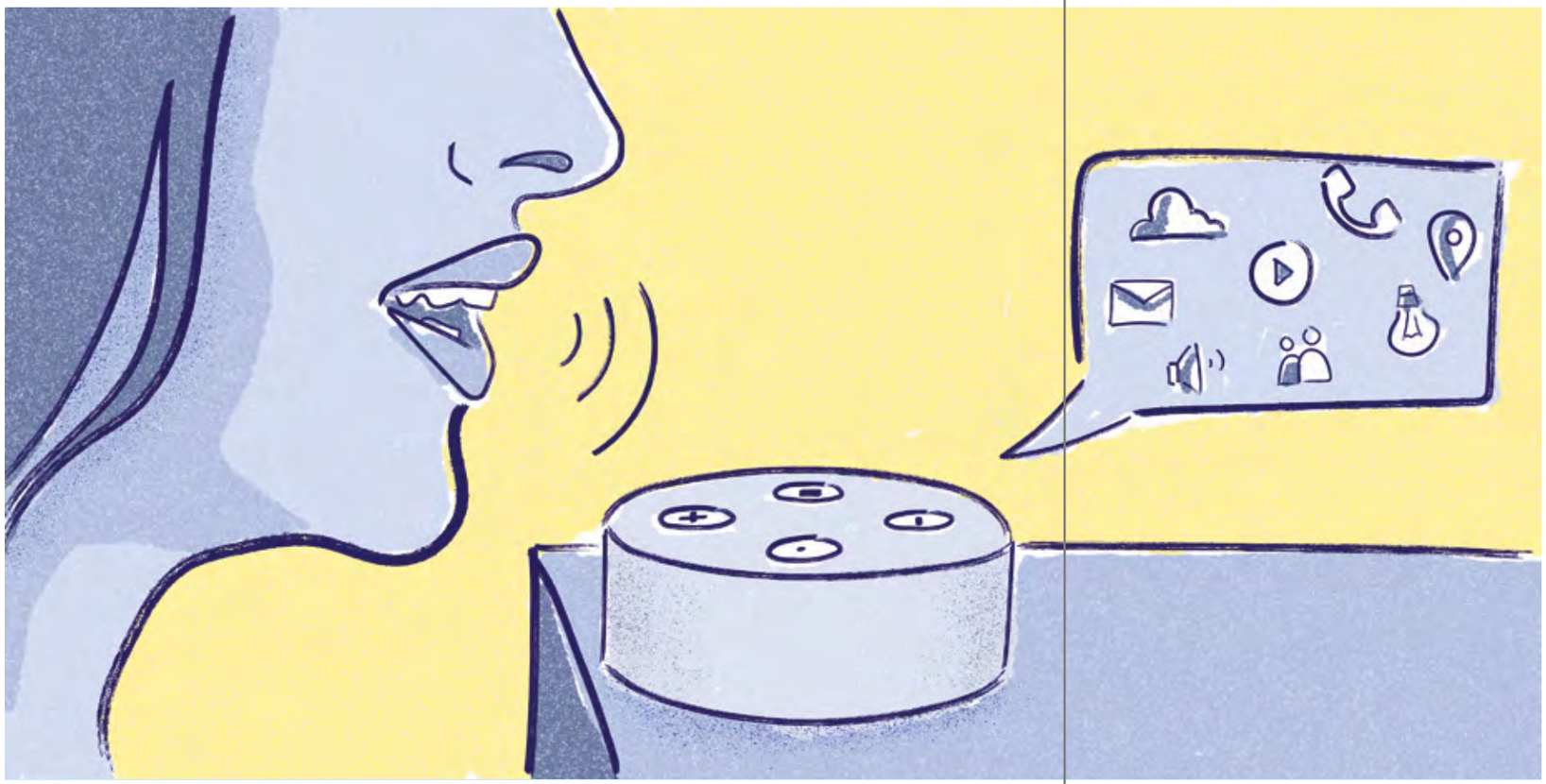
Empathy, however, is not always positive. First, people with high empathy could have a challenging life if their empathy ends up consuming a lot of their affective energy when they are exposed to challenges among their peers (if you have high empathy, you may constantly be sad since every time someone around you is challenged, it will rub off on you). Second, as high empathy is typically connected to overall high emotionality, the volatility of an empathetic person's emotions is presumably higher. For example, a woman who is very empathetic and often acts as her friends' confidant will likely hear many stories of challenges and heartbreaks and, in turn, will internalise those and experience negative emotions more than a less empathetic person would.

> Can we imagine a machine capable of providing empathy, support and assistance to people?

↑ Over
Joseph Weizenbaum's famous ELIZA program, which demoed the thrills of a natural language conversation with a computer for the very first time. His program is presented here in the famous VT100 terminal, which was introduced in 1978 and soon became a universal standard.

Alexa is the intelligent personal assistant developed by American corporate giant Amazon. Alexa is able to interact vocally, play music, create to-do lists, set alarms, stream podcasts, play audiobooks and provide weather forecasts, traffic updates and other information, such as news, in real time.
Alexa can also be used to control other intelligent devices, using itself as a home automation device.

Source: Wikipedia



Therefore, we value having people with high empathy around us, but being that person might be a taxing existence.

Given the surge in technologies offering alternatives to many human capabilities, can machines also replace humans in providing empathy, support and help in dire moments?

Current technology and empathy

Indeed, recent advances in technology offer a tool for emotional support. Engineers can now produce human-like robots that look like us and provide realistic proxies that can act reasonably human when we need an ear. How well do they work? Well, evidence from the early days of computer science shows that it doesn't take much for us to ascribe human attributes to machines. We are quick to confide our deepest emotions to them. A famous computer program called ELIZA was coded in 1964 and used basic heuristics. It turned sentences into questions, so when a human wrote, 'I feel depressed', ELIZA would respond, 'Why do you feel depressed?', and this technique was quite useful. Patients confided in the program quickly, conversed with 'her' at length, and described the experience as a helpful proxy for therapy.

> When they act in unpredictable ways, we tend to treat them like living beings

Advances in language processing and the understanding of human emotions since the time of ELIZA suggest that we can significantly improve our ability to generate meaningful conversation using such machines. Indeed, bots like Alexa, Siri, and Cortana are often seen (especially by children) as having empathy and agency.

Studies of agency show that once a machine demonstrates the ability to move and talk and shows some unpredictability (whether artificial, due to bugs, or real, due to adaptive coding), people tend to start treating it like a living organism. That is, when a Roomba vacuum cleaner is unable to reach its charging unit because an obstacle is in its way, people often speak about it in human terms rather than machine terms. For example, they use words like 'he' or 'she', rather than 'it'. This begs the question why most kids, when talking to Alexa, do not end their requests, such as 'Alexa, tell me a joke', with the word 'please'.

That said, we still have an assumption that humans are better than machines at being empathetic. In fact, AI studies in health care show that patients choose to be seen by a human doctor rather than an AI device, even if they are told that the AI device is more likely to diagnose them accurately, since they feel that the machine would not be able to empathize with them (and this is an important need that they want the doctor's visit to fulfil).

Surprisingly, more and more studies comparing humans and machines in the domain of empathy show that, for a number of tasks, machines are actually better at understanding our emotions, intentions, desires and complex thought processes. Simply put, at times, when you need someone to listen to you rant or reflect on your feelings, a robot might be more useful than a person. For the experience to be useful, however, we also need to believe that it is useful. As long as humans have a bias against machines in this regard, we could remain reliant on humans for such purposes.

Given this contradiction, we must help everyone learn to increase their empathy, whether they are intuitively good at it or not.

Is empathy exclusively a human trait?

Before we focus on ways to increase human empathy, we should consider whether empathy is indeed unique to humans. Is it a trait that exists in certain areas of the brain, ones that only humans have, or do other organisms possess the trait as well? We can gain a new perspective on empathy by observing animal brains.

> Is empathy a uniquely human trait, or are animals also capable of displaying empathy?

Studies on animals show that they do have empathy. Having empathy seems to correlate with the development of certain brain areas, and not necessarily the most advanced ones in complex species like great apes. Mice, rats and birds, far older in evolutionary terms, also exhibit empathy in certain contexts.

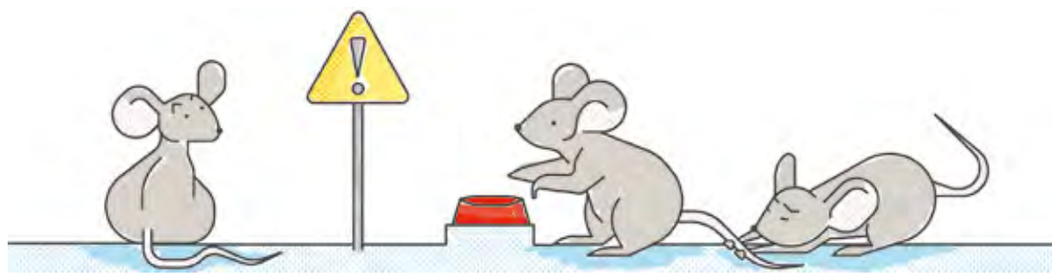
Specifically, research seems to suggest that three areas of the brain are key to experiencing empathy: mirror neurons, pain/pleasure centres and emotion centres. If a creature can experience pain and pleasure and has a basic theory of mind, that creature can exhibit empathy. If we could replicate those functions in a machine, the machine would not merely seem like it has empathy; we would actually experience it when interacting with the machine.

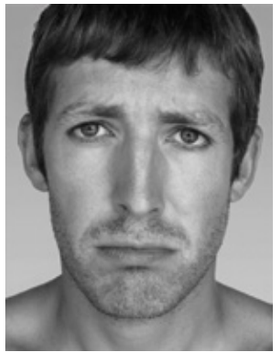
One of the classical animal studies demonstrates this effect easily. A mouse is placed in a cage and quickly learns that a light flashes seconds before the floor is electrified, shocking the mouse and causing momentary pain (enough pain that after learning the pattern the mouse shows signs of despair when the same lights start flickering).

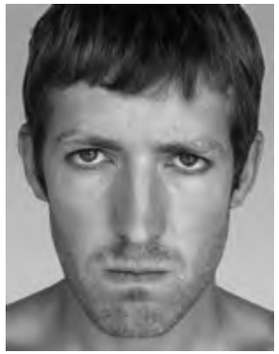
After the mouse is trained, or 'conditioned' in research jargon, it is removed from its cage and placed in a different cage nearby that has a transparent window looking into the first cage. In other words, the mouse can see the shock-cage but is not sitting in it. The new cage is full of treats and interesting things that could distract our mouse. Then the mouse in the comfortable cage sees a different mouse being placed into the shock-cage. The second mouse does not know what is about to happen when the lights start flashing. The second mouse would have to leave the cage quickly or else experience the same electric shock and pain the first mouse learned about. The first mouse, however, can rescue its friend from the shock by pulling a lever right outside the shock cage.

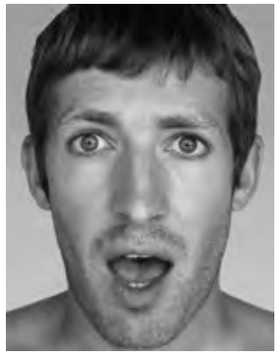
> They wanted to see whether a mouse would carry out a task and take a risk in order to save a second mouse

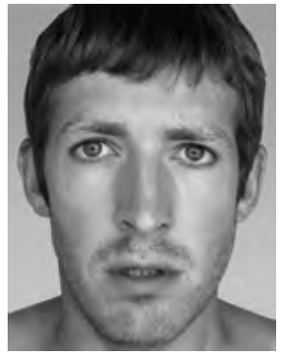
Experimenters wanted to see if the first mouse would make the effort and take a risk to save another mouse. The answer is yes, a big yes. Scientists showed that not only will the first mouse make a considerable effort to help another mouse, it will do so even if the rescue puts it in danger. Placing obstacles, fire, mouse puzzles to be solved, food to be ignored, and a variety of challenges in the way of the lever did not stop mice from helping others: empathy at its best. In fact, in the original study the scientists even tried to look at empathy towards

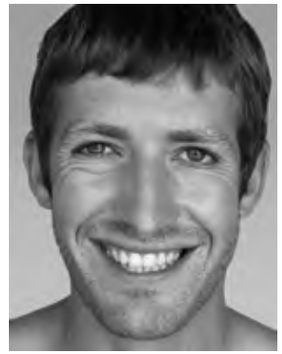


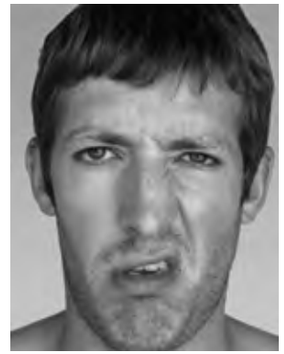

Sadness


Anger


Surprise


Fear


Happiness


Disgust

FLICKR / STUART HAMILTON

> The first mouse displayed signs of distress when it saw that the second mouse was about to receive an electric shock

individuals 'outside the group'. Humans, at times, fail to help those they see as not members of their groups (i.e. people from opposing sport teams may not make much effort to help their opponents, and furthermore will readily take actions that hurt them). Mice, however, go to great lengths to help others of their species. Mice from different 'tribes', of different ages, with different skin/fur colours, and having other differences make great efforts to help others.

Importantly, since these studies were done on mice, the researchers also observed the brain areas activated during the experience and found that the first mouse showed signs of pain when it saw the other mouse about to be shocked. They found that a brain centre, referred to as the empathy site, is activated when the animal formulates a strategy for helping another animal.

These studies showed that empathy is a brain function that can be measured and quantified. We can now go back to humans and see whether we can develop our empathy and create closer connections with others.

Future technology and empathy

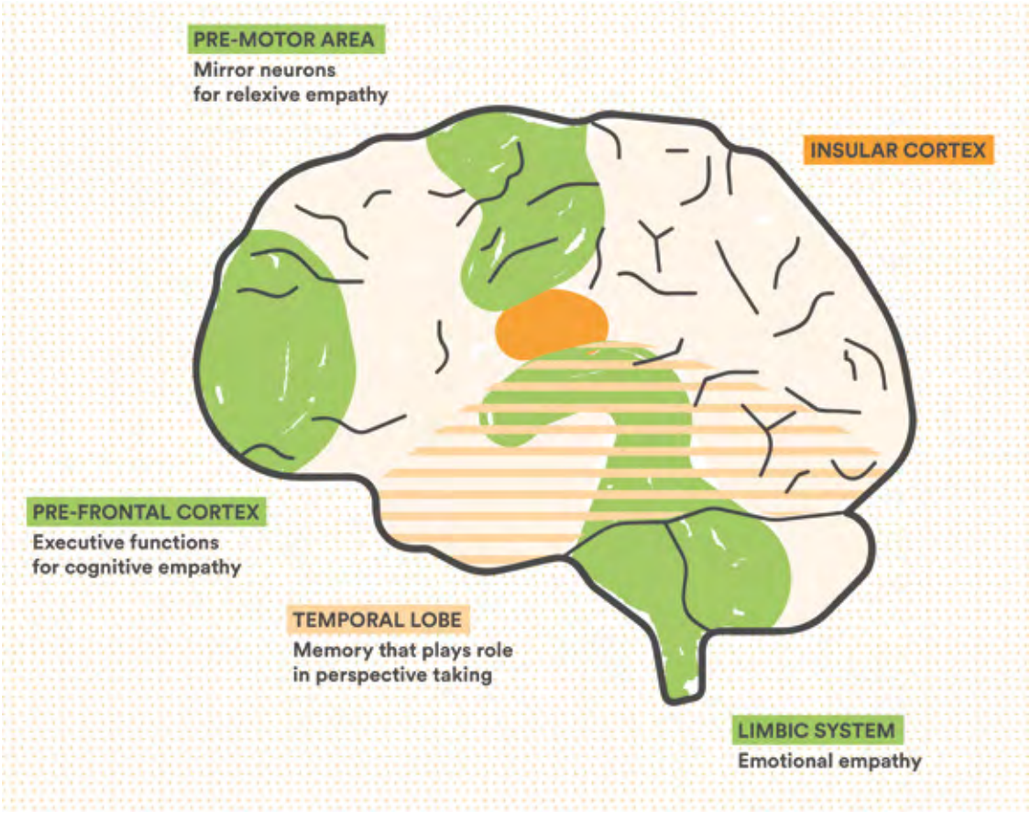
So far, most tools to increase empathy have focused on identifying cues about another person's emotional state. Those cues have primarily been language: we speak to our doctor, talk to a friend, interact with ELIZA using text. Software turned the language into code it could analyse to form a flowchart of options. The options may be more or less sophisticated but boil down to an algorithm classifying the person's emotional state and providing a reflection of that state. Current technologies allow us to do better. In fact, some of them can do the job better than we can.

First, recent advances in assessment have shown that information about who we are, where we are, who we are with, what we do, and various other contextual facts can be extremely predictive of our emotional states. Some of us are better at empathising when we are surrounded by close friends and relatives; some, unfortunately, are not. Some are generally in better moods at certain hours (say, morning), whereas others feel blue at those times. Some are better when they are hungry, some when full, some when they are alone, some when with people, etc. Knowledge of our past behaviour, our similarity to others — and, with more data from companies like healthcare providers

> An algorithm allowing us to categorise the emotional state of an individual and to be able to replicate it

Paul Ekman (Washington D.C., 15 February 1934) is an American psychologist. In 2009 he was included in Time Magazine's list of the 100 most influential people in the world. Ekman demonstrated how facial expressions and emotions are not determined by the culture of a place or by its traditions. Rather, they are universal and identical, suggesting they are rooted in biology. In 1972, whilst working with an isolated tribe in Papua New Guinea, he drafted a list of the universal 'basic' expressions: sadness, anger, surprise, fear, joy and disgust.

Source: Wikipedia



Empathy and the brain

Human beings have the capacity for three kinds of empathy: reflexive empathy, emotional empathy and cognitive empathy.

Understanding the three types of empathy makes it clear that being an 'empathetic' person is not a simple personality trait. It's a package of skills that combines biological non-negotiables of mirror neurons and genes, development of neural pathways, and the executive function of perspective taking.

Source: Harvard Center for the Developing Child

or insurers, we can start making those alignments — and our personal evaluations of ourselves could be sufficient to predict when a person is in a state that requires more support.

In fact, early evidence from computer tests show that machines can sometimes predict a serious situation before we recognize it ourselves. The computer might know that whenever we are with a certain person in a certain place (perhaps with an abusive boyfriend in a certain location, perhaps his home) we are likely to feel bad for the following hours. You might not recognize the pattern, but a machine will, and it will be able to alert you to the looming change in mood or prompt a close friend to help.

Second, biometric tools are becoming increasingly competent at identifying our emotional states before we can label them ourselves. As it turns out, some emotions take a long time to manifest cognitively even if they are brewing within us already. We become angry or become sad without recognizing it. Since research on facial expressions has uncovered a large set of cues that signal a feeling even before we are aware of it (e.g. the muscles next to our temples move less when we are turning sad, even before we fully experience it), a computer might be able to recognize the decline in happiness and offer an alternative or distraction that will stop the descent.

Aiding the information with readings from devices measuring such things as heart rate, respiration rate and skin conductance (some of which are already embedded in various wearable devices that many individuals use constantly) may improve the accuracy of the prediction.

Supplementing this information with other mobility data (i.e. whether we toss and turn in bed more than usual when we are sleeping at our parents' house), or voice data (i.e. whether our tone of voice changes dramatically when speaking to Spirit Airlines' customer service) would allow the computer to fully detect our emotional state and offer help.

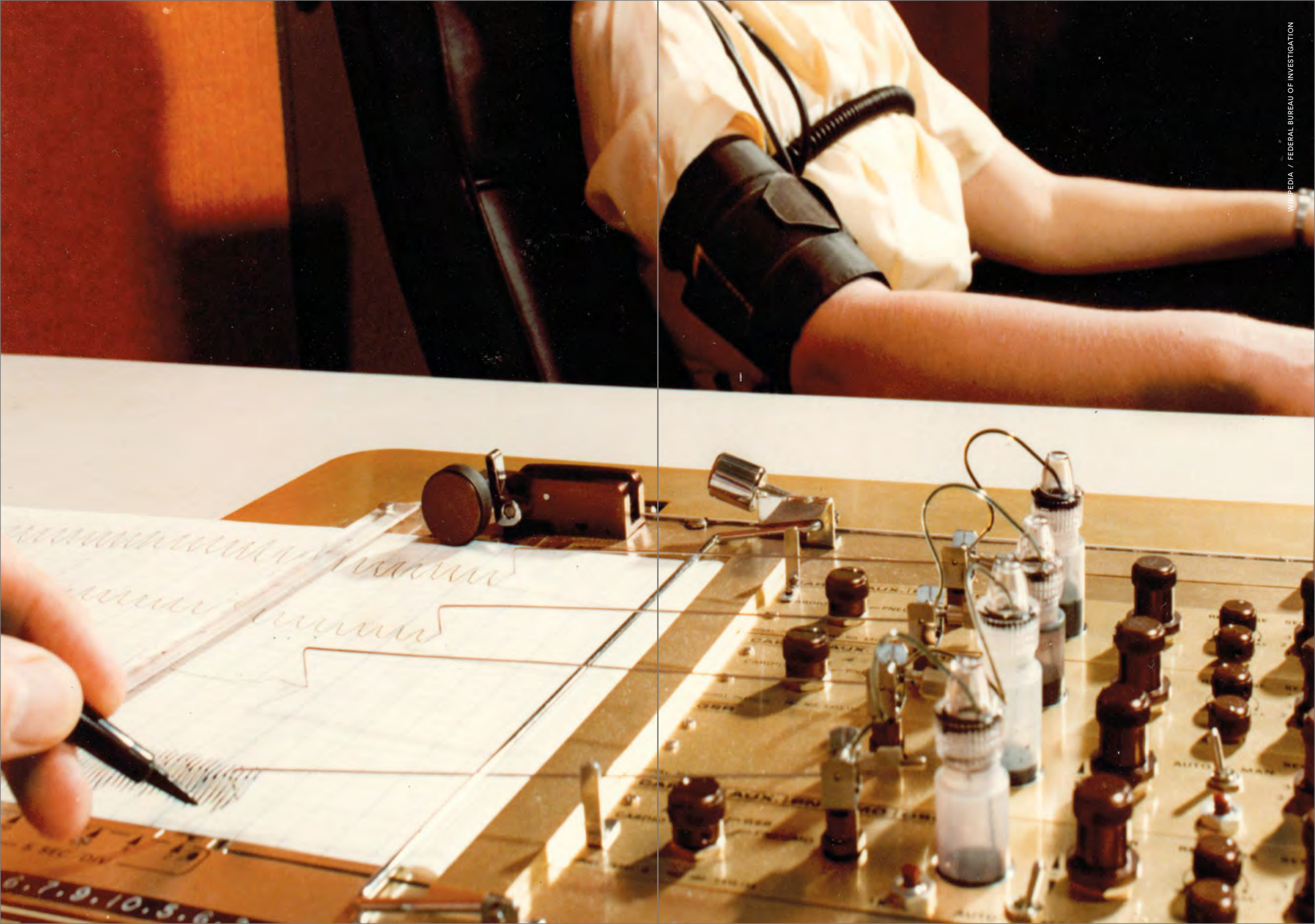
Voice analysis brings us beyond the verbal data used to analyse our language to more complex calculations. That is, instead of the original ELIZA therapy where your words are coded to figure out your emotions, we could have Alexa, for example, learn your typical language usage and recognize a deviation from it as a cue for help (e.g. you typically call your father 'Dad' when you are happy, but call him by his first name when you are not).

Fourth, machines are increasingly able to access the brain. As the animal studies showed, certain sites in our brain indicate our emotional states in an immediate way. Reading those areas could allow a machine to access our emotions and know our mental state.

> There are a series of identifiable precursors to a given emotion before we are conscious of it

These are only four examples from current emerging technologies. As new technologies emerge and assessment tools increase in accuracy, we can expect faster, more precise assessments.

These tools are likely to make machines better at understanding our emotional state and, at the very least, offer a fuller reflection on the validity of our state. But technology can do more. It can actually help other humans increase their empathy towards us.



WIKIPEDIA / FEDERAL BUREAU OF INVESTIGATION

↖ Previous
Polygraphs, known as 'lie detectors', measure and track various physiological reactions (such as blood pressure, arterial pulse and breathing) while the subject responds to a series of questions, assessing emotional and psychological changes during the session.

Source: Wikipedia

another. This has not been done with humans yet. Studies on animals have shown that this ability to transfer neural activity from one animal to another is powerful at generating an alignment of experiences, but we cannot expect it to be adapted to humans soon.

Given the growing conversation on neural implants and the decreasing resistance to them (as evidenced by more companies being formed, more government money being allocated to research, an increase in the conversation about them and the growing number of humans who already have neural implants embedded in their brains — thus far, purely for clinical

> Some people experience more intense emotions and are able to identify with others' feelings in a stronger way

Helping humans increase their empathy

Some humans are just better at understanding others. Some of us are more attuned to others' feelings, some less so. Recent advances in technology are showing that this can be remedied, too.

For example, because one way people connect with others is by mirroring their actions, we can now use neural devices not just for readout but also for stimulation of the mirror sites. That is, if your husband feels sad and you are not noticing it, we can activate the feeling of sadness in your brain and induce the emotion in you: a complete transfer of one's emotion to

purposes), I suspect that this may be a realistic offering within the coming years.

Some alternatives for neural offerings are already accessible now. These alternatives mimic neural function using embodied cognition as the tool for the behaviour. For example, in the context of Parkinson's Disease, challenges between the caregiver and the patient have led to a novel solution: make the caregiver momentarily feel like the patient. Those caring for patients with Parkinson's Disease often complain that they get frustrated with the patient (through no fault of the patient, the patient's tremors may inevitably cause them to spill their food, and the caregiver must clean it up). To help the caregiver understand the challenge facing the patient, some healthcare providers have partnered with robotics companies that dress the

> A medical assistant can feel the loss of control brought on by a disease

caregiver in a prosthetic exoskeleton that shakes and moves, simulating the experience of a tremor in the wearer. Letting the caregiver experience the lack of control that comes with Parkinson's presumably makes them relate more, physically and emotionally, to the patient they are caring for.

Finally, more extreme solutions involve small interventions based on neuroscience to promote empathetic behaviour. Novel research in neuroscience can now assess an individual's brain to see if they have high/low empathy and whose brains they are more likely to synchronise with during conversation. Think about it as a gadget that a person wears on their head while they are watching short videos and then, after the viewing, the person might score 9 out of 10 on empathy (or, more narrowly, 9 out of 10 right now, with people of a certain age and gender). It might also suggest that the individuals just assessed are likely to have their brains align if they talk about topic X. The participants in this assessment will then know who (out of all the people undergoing the assessment simultaneously) is best equipped to converse with someone about a problem. Once the best candidate is selected, he or she would help the specific person in need. The neural assessment simply tells two people that they are, at this time, the best matched pair to help each other. Think of it as a 'dating app' (using neuroscience) that matches people by their emotional readiness and alignment in thinking, with empathy as the goal.

↘ Next
World chess champion Garry Kasparov rests his head in his hands as he is seen on a monitor during game six of the chess match against IBM supercomputer Deep Blue , May 11, 1997. The supercomputer made chess history Sunday when it defeated Kasparov for an overall victory in their six game re-match, the first time a computer has triumphed over a reigning world champion in a classical match. Kasparov resigned after 19 moves.

REUTERS / PETER MORGAN

↓ Under
Paro is an advanced interactive robot developed by AIST, a leading Japanese industrial automation pioneer. It allows the documented benefits of animal therapy to be administered to patients. Paro has five kinds of sensors: tactile, light, audition, temperature, and posture sensors, with which it can perceive people and its environment. Paro can learn to behave in a way that the user prefers, and to respond to its new name. When interacting with people, Paro responds as if it is alive, moving its head and legs, making sounds and showing your preferred behaviour.

REUTERS / KIM KYUNG-HOON

Risks

These advancements in technology do not come without risks. Generally, many risks come with disturbances to the status quo (technological risks, risks of adaptation, risks of increased inequality due to uneven access to the solutions), but we will focus here on one unexpected risk that should get more attention than it does: the risk of redirected empathy. That is, our increased use of technology to enhance empathy will backfire by shifting the current models of our biological empathy and altering their function by, for example, making people care more for the machines generating the empathy than for the humans they were supposed to serve.

Indeed, we have minor past evidence that this might be a challenge. One example is the improvement in artificial intelligence and its alteration of empathy towards humans.

> The positive impact on the economy and on social welfare will have an enormous and unrivalled reach

In 1997, IBM's cutting-edge technology, in the form of the computer program Deep Blue, was battling world chess champion Garry Kasparov in a series of chess games. Everyone was rooting for Kasparov — for the human — to win. When Kasparov lost the first of three games, a gloomy feeling set in among the viewers: the machines were beating us. When Deep Blue won its third game, there was silence, a silence of fear and despair.

It took 14 years for humans to come around entirely. In 2011, when IBM launched another product of its advanced technology, this time in the

form of Watson, Watson played Jeopardy with two human experts and triumphed as well. The biggest shift was in the audience's support; people were rooting for Watson to win. Fourteen years and we shifted from siding with the human to siding with the machine.

A similar story played out in the battle between DeepMind's machine and the world champion Go player. We like to see the machines play. We support them. Our empathy is aimed in a different direction. That was 14 years ago. Where will additional years and improvements in the look and feel of the technology take us?

> At the end of the day, we as human beings decide what happens in films

Conclusion

We are entering a new era in thinking about and enhancing empathy, one where we can learn about the neural mechanisms that drive empathy in the brain and train ourselves to increase or decrease our empathy based on momentary needs. We can enhance empathy at times and reduce it in others, train machines to serve as supporters or as guides in perceiving another person more accurately.

The positive impact these advancements will have on our social well-being and our economy are unparalleled. They stand to make us stronger and closer as a society by giving us the optimal tools to be there for each other, while limiting the challenges that come with over-empathy in the person providing the support (increased volatility). In short, it will help us be there for one another.

Those changes, however, may come with unpredictable effects. Becoming more empathetic and altering the way things are currently done always runs the risk of changes that we cannot anticipate and control, that go awry and require us to respond to unpredictable results. Indeed, when technology and AI are driving the outcomes, there is always the risk that we humans will be the collateral damage of the advancement. As a Hollywood filmmaker once told me, currently in all the movies we make where there's a battle between humans and machines, the films start with the machines winning on every account because they are faster than us, stronger than us and smarter than us. We are doomed. But, somehow, towards the end of the film, around minute 75 out of 90, the power of empathy and love brings the (typically two: male and female) heroes together to beat the machines.

That is the current mode of Hollywood scripts. It is this way mostly, he suggested, because we get to make our own movies, and humans are still the paying audience for those. 'Once the AI start making their own films, you'll get to minute 75 in the same situation, but now, because of the power of empathy and love, the machines are going to win the battle against humans.'

Empathy is a wonderful and powerful trait in humans and animals, one that allows us to be there for one another and help our social network strengthen its bonds. Careful stewardship of these bonds and the ways we increase empathy will make our networks stronger and more supportive. Now, as technologies become prevalent and we are their overlords, is the time to decide how we want the future of empathy to look.

Moran Cerf

Moran Cerf is a neuroscientist and professor at the Kellogg School of Management. He is in charge of the neuroscience program at Northwestern University, as well as being a member of the Northwestern Institute on Complex Systems. His work helps individuals and companies to make the most of contemporary understanding of the human brain, with the goal of improving understanding and evaluation of clients and corporate decisions. He holds a PhD in neuroscience from Caltech and an MA in philosophy and a BSc in physics from the University of Tel Aviv.

He holds numerous patents and his projects have been published in leading academic journals including Nature and the Journal of Neuroscience, as well as numerous popular science magazines including Scientific American Mind, Wired and New Scientist. His research has also been featured in a range of media and cultural outlets including CNN, BBC, Bloomberg, NPR, Time and MSNBC. He has been invited to events including the Venice Biennale and the China Association for Science and Technology and has contributed to pieces in Forbes, The Atlantic Inc. and others. His work has received numerous accolades and grants, including the Instructional Improvement Grant and the prestigious President's Scholarship for Excellence. He was recently included in a list of 'Best 40 Under 40 Professors'. Before his academic career, he spent approximately ten years in the private sector, working in innovative research sectors including cybersecurity (as a hacker), pharmaceuticals, communications and software development.

Our Own Natural Resource

A young girl takes a photo of her dad with a smartphone inside the Forbidden City in Beijing.

GETTY IMAGES / NICOLAS ASFOURI

Motivation driven by our own emotional intelligence can help us to overcome our fears and to help others. Moreover, businesses and the economy as a whole can benefit from this.

by the Editorial Office

Where once the morning commute — whether by bus, train or subway — was accompanied by the rustling of the daily newspapers, today this has been replaced with compulsive scrolling on mobile phones. This is merely one of the many changes modernity has wrought on our daily routines, one that can often leave us feeling isolated. The development and ubiquity of technology often appears to be pushing people into increasingly limited digital spaces that reflect the way we are sealing ourselves off into social bubbles. In extreme cases, this can lead to us staying shut up at home — apparently satisfied by virtual reality — to manage the discomfort and isolation that seem to be a reflection of frenetic world shorn of its values and lacking emotional warmth in its relationships.

The truth is that we already have everything we need within us to help us escape this individual and collective vicious cycle. One thing we have is empathy: the ability to place ourselves in someone else's shoes. In a way, this is the basis for our ability to work together, show solidarity, look out for and include one another. The study of this human characteristic (which is also common in many members of the animal kingdom) has been the focus of research and discussion in psychology and medicine, pedagogy and philosophy. From nursery to university, the role of teachers includes having empathy with those under their tutelage. Keeping a distance robs a teacher's message of half its impact by failing to stimulate what scientists refer to as 'emotional intelligence', which is one of the many elements that govern how we think.

Seen in this light, our lives and the nature of the relationships we form at home or in the workplace are changing.

→ Right
Germany Free State Prussia Berlin: Students of the Frederick William University (Friedrich-Wilhelms-Universität) reading newspapers in the reading room of the university library - 1931.

> We can remain sealed off at home, seemingly satisfied by virtual reality, while struggling with distress and isolation

Emotional intelligence is made up of four core skills

When the masses first became aware of emotional intelligence, it served as the missing link in a peculiar finding: people with average IQs outperform those with the highest IQs 70% of the time. Emotional intelligence is made up of four core skills that pair up under two primary competencies: personal competence and social competence.

Source: www.weforum.org

It follows that technology has a critical role to play, with digital communication making it possible to convey messages of solidarity and empathy in real time. Take, for example, the response to victims of tragedies such as terrorist attacks or natural disasters. This could be the only way to combat the extreme manifestations of nationalism, racism and xenophobia that seem determined to turn the clock back on progress. However, if empathy is a resource, where does it originate? What is it, how do we encourage it, and in which parts of society could it make an impact? Any answers to these questions call for an amalgamation of the empirical data from science and the philosophical approaches from the humanities.

What is Empathy?

The origins of the term are explained to us by two researchers (F. Ioannidou and V. Konstantikaki) in an article on empathy and emotional intelligence (Empathy and emotional intelligence: What is it really about?). 'The origin of the word empathy' they explain, 'dates back to the 1880s, when German psychologist Theodore Lipps coined the term 'einfuhlung' (literally, 'in-feeling') to describe the emotional appreciation of another's feelings.' Empathy has more recently been described as the process of understanding the subjective experience of another person while retaining the position of a detached observer.

The observer, however, does not remain indifferent. 'It seems that empathy plays an important role in a therapeutic relationship', the researchers add. In short, 'empathy means to recognize others' feelings, the causes of these feelings, and to be able to participate in the emotional experience of an individual without becoming part of it.' Furthermore, '...empathy is the 'capacity' to share and understand another's 'state of mind' or emotion. It is often characterized as the ability to 'put oneself into another's shoes', or in some way experience the outlook or emotions of another being within oneself...'

Within the clinician-patient relationship

The two researchers also see empathy as a 'powerful communication skill' which is often misunderstood and underused. Initially, empathy was referred to as 'bedside manner'; now, however, 'educators consider empathetic communication a teachable, learnable skill' that has tangible benefits for both clinician and patient in the efficacy of the clinician-patient relationship. According to Ioannidou and Konstantikaki, 'effective empathetic communication enhances the therapeutic effectiveness of the clinician-patient relationship [and] appropriate use of empathy as a communication tool facilitates the clinical interview, increases the efficiency of gathering information and honours the patient.' Additionally, 'Emotional Intelligence (EI), often measured as an Emotional Intelligence Quotient (EQ), describes a concept that

> Empathy means identifying others' feelings and participating in the emotional experience

involves the ability, capacity, skill or a self-perceived ability to identify, assess, and manage the emotions of one's self, of others, and of groups.'

This is a relatively new area of research in medicine and the wider field of psychology, and therefore this concept is still evolving. Academics studying IQ, or intelligence quotient, see it as too limiting a concept, and there is much more potential research in what has become known as emotional intelligence. Essentially, this

A clown's job, like the job of jesters in the courts of powerful kings in the Middle Ages, is to show those in power another way of seeing the world. When clowns are in hospital, a highly controlled, hierarchical, and rational environment is transformed into one filled with empathy, playfulness and imagination.

↓ Under
"Doctor Foncho' blows bubbles to entertain four-year-old patient Yasmine at the children's hospital in Lima.

REUTERS / PILAR OLIVARES

looks beyond the traditional measure of intelligence, which is seen as ignoring essential behavioural and personality traits. One example is of an academically exceptional individual who lacks social skills. Or, in other words, empathy.

The Science of Empathy

'The Science of Empathy' is an article by Helen Riess published in the Journal of Patient Experience (JPE), a scientific journal dedicated to research on any subject that impacts the experience of medical patients. Riess states that empathy plays a critical interpersonal and societal role, enabling sharing of experiences, needs and desires between individuals and providing an 'emotional bridge' that

> Emotional empathy alone is insufficient: there is also a need for a 'cognitive' empathy.

promotes pro-social behaviour. The author of many articles on the subject, including The Empathy Effect, she writes, 'This capacity requires an exquisite interplay of neural networks and enables us to perceive the emotions of others, resonate with them emotionally and cognitively, to take in the perspective of others, and to distinguish between our own and others' emotions.' Riess, a lecturer in psychiatry at the Harvard Medical School and Director of Empathy Research and Training in Psychotherapy Research at Massachusetts General Hospital, has a long history of research on empathy. This began with her work treating bulimia nervosa through an integrated treatment plan incorporating cognitive behavioural, relational, psychodynamic


REUTERS / SHANNON STAPLETON
BLACK
UTIFUL.
ASIAN
NATIVE
IS
TRANS IS BEAUTIFU
TY AT YALE
Posted with permission from the Yale College Dean's Office.
STAND WITH YOUR SISTERS OF COLOR. NOW, HERE.
STAND WITH YOUR SISTERS OF COLOR. NOW, HERE. ALWAYS.

Emotions drive learning, decision-making, creativity, relationships and health. The Yale Center for Emotional Intelligence uses the power of emotions to create a more effective and compassionate society. They conduct research and assist people of all ages in developing their emotional intelligence.

↖ Previous
A student walks by a college notice board on campus at Yale University in New Haven, Connecticut November 12, 2015. More than 1,000 students, professors and staff at Yale University gathered on Wednesday to discuss race and diversity at the elite Ivy League school, amid a wave of demonstrations at U.S. colleges over the treatment of minority students.

care afforded to patients who differ from the majority culture or the majority culture of healthcare providers. Much work lies ahead to make healthcare equitable for givers and receivers of healthcare from all cultures.' This is not a purely medical issue: 'If we are to move in the direction of a more empathic society and a more compassionate world, it is clear that working to enhance our native capacities to empathise is critical to strengthening individual, community, national and international bonds.' What Riess makes clear, among other things, is that empathy must be encouraged, sustained and assisted in order to develop. Furthermore, it can represent a healing balm for society as a whole, not only within the walls of medical institutions.

and experiential therapies. As she describes it, most recent research demonstrates that a lack of empathy in the clinical-patient relationship is a significant factor in treatment, making patients 'unlikely to follow through with treatment recommendations, resulting in poorer health outcomes and damaged trust in health provider relationships.'

Riess also emphasises, however, that emotional empathy alone is insufficient: 'cognitive' empathy is also necessary. 'Cognitive empathy', she writes, 'must play a role when a lack of emotional empathy exists because of racial, ethnic, religious or physical differences. Healthcare settings are not exempt from conscious and unconscious biases, and there is no place for discrimination or unequal

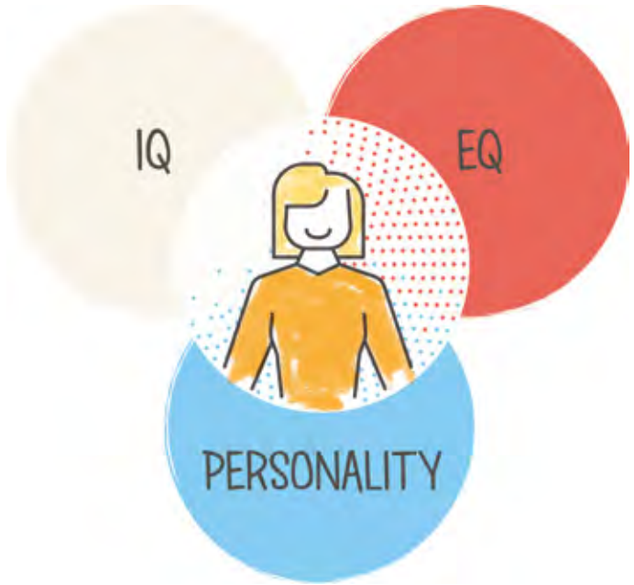
> When empathy is in decline, narcissism, aggression and hatred take its place, and schools suffer as a result.

Empathy and Education

Michele Borba is a former teacher and an expert in educational psychology who specialises in the relationship between parents and teachers. He is the author of several works, including the bestseller UnSelfie: Why Empathetic Kids Succeed in Our All-About-Me World. Borba believes that empathy is

Emotional intelligence is an essential part of the individual's whole

It is impossible to predict emotional intelligence based on an individual's intelligence alone. Intelligence relates to one's ability to learn, and it's the same at age 15 as it is at age 50. Emotional intelligence, on the other hand, is a flexible set of skills that can be acquired and improved with practice. Personality is the final piece of the puzzle. It's the individual 'style' that defines us.



Source: www.weforum.org

at the heart of every action taken by a 'caring' school, a sensitive teacher and a civil society. After all, alongside the domestic environment, schools are the primary source of our education. In Borba's words, 'When empathy wanes, narcissism, distrust, aggression, bullying, and hate rise—and schools suffer.' She argues that, in the case of the United States, 'We are currently in the midst of an educational crisis. American teens are now 40 percent less empathetic than they were three decades ago (Konrath, 2010). While we are producing a smart and self-assured generation, today's students are also the most self-centred, competitive, individualistic, sad, and stressed on record.' Conventional intelligence and emotional intelligence are recurring themes. One without the other paints an incomplete picture. Recognising that students need something more than simple academic rigour and test prep in order to succeed, says Borba, an increasing number of schools are concentrating on social/emotional skills such as empathy. But which tools can we use to improve empathy and how can headmasters know whether or not they are being applied efficiently? 'I've spent the past decade combing for answers to questions like these and am convinced that we can solve the empathy crisis. But to begin making headway, school leaders must create the right culture, vision, guidance, and professional training so teachers can succeed. The first step is helping teachers understand why empathy must be an integral part of any classroom and school,' Borba says.

To measure its managerial performance, FedEx carries out an annual review in which every employee provides feedback on their manager. Topics covered include respect, equality, listening and trust, all leadership qualities tied to relationship-building and emotions.

↓ Under
Fedex Delivery Truck, worker unloading boxes.

Healing a Business with Empathy

Having examined the meaning of empathy in the context of hospitals, schools, social services and society more generally, can we apply the same parameters to the economy? How important is trust between a person providing a service and their client? Or between work colleagues, especially in a company that is struggling? What if, as happens with human beings, the company becomes sick? And what is the impact of gender discrimination, for example, in all of this? The psychoanalyst Alessandra Lancellotti is the author of Cambiamente [Mind-Change], an essay that goes beyond the treatment of individuals to examine the treatment of businesses, which she sees as a living body within society. Her approach to 'healing' a business looks beyond finances and includes interpersonal relationships.

She sees these as a tangled web, and sees emotional intelligence, which is all too often undervalued, as playing a key role. Regarding the presence of women in the workforce, Lancellotti is fully convinced that they possess more emotional intelligence than men. This gives them an increased ability to create relationships based on empathy with those they interact with, 'to understand and hear what others think and to reach places men can't.' This is not ideological;

ALAMY / DIRECTPHOTO COLLECTION

> Companies are saved by examining not only their budgets but also their interpersonal dynamics

rather, it is the result of her experience as a psychotherapist specialising in the workplace.

With regard to the analysis behind ways of 'healing' a company, contemporary research is playing a part in the new way of examining economic affairs. Here, it is examined not only through cold calculations of numbers and commercial trends, but also through the warmth of relationships. For this to work, however, you need...empathy.

Empathy & the city

'Urban & Human Empathy' is a photographic project centred on the human presence immersed in the urban context.

by Stefano Ambroset
– Founder of DotArt

To plunge into a situation to experience and transform it, is often more valuable than inventing and visioning a brand new thing. Frame showing city is much more effective when surrounded by a light. But, with no empathy it's easy to forget to experience it. It's easy to fail.

The empathy inspired by the sight of the subject and the relationship between the photographer and the environment leads to an augmented vision of that specific area - or location. The photographer begins an open dialogue, maintaining a reflective attitude: he performs his work both instinctively, both capturing the situation and at the same time through the study of the

Open Air Room, Guardians Of A Situation

Francesco D'Alonzo (Italy)

> In urban photography, empathy is tied to a sense of belonging

multiple interactions that surround him. The need to move becomes clear, it and harbours energy from the portrayed scene.

Empathy in urban photography develops into a sense of belonging. Before one discovers his own benchmarks and values, it takes to understand first that the self belongs to something. This is about us, as photographers we convey that energy to beholders, whom get full control and responsibility of it. We conceive photography putting ourselves into the spectator's position. The audience is not merely a user but a sympathetic and active part of the creation itself.

Empathy-enriched, the role of the photographer becomes less of a maker, rather he promotes and invites he audience to join him to create art and visions. This means to sideline ourselves in order to leave something of ourselves in the eye of the beholder; we renounce the leading role.

Sometimes, the eyes of the city are clouded by the longing to see what they want. What is perceived as far can not be experienced through empathy. Empathy is, by definition, the self-identification in the other being: this identification creates uniqueness, the essential uniqueness for love. When we don't look in the eyes of the other being there is no love: therefore no empathy. Consequently, such a condition hardly appears to be a city but a non-place.

But, really, do we not see each other? Who knows where those people passing by are heading to? Who knows the color of that desolate courtyard at sunset? Who was ever by the closing in a metro stop and could say how it looked like, when the vibrant crowd of the peak hours had gone, being disappeared into the secret of the houses.

What has happened to us if we can not see what stands right in front of us in full light? Identification is a matter of selection, we see what we want to see. Therefore we behave as the eyes of the city: our eyes are being clouded by the longing to see only what they want.

Before you discover your own benchmarks and values, you've got to understand that you belong to something. The sense of belonging is empathy. The capacity to feel what another person is experiencing from within the other person's frame of reference, the capacity to place oneself in another's position, to understand his experiences.

Empathy might be more convenient in private life than at work but yet, cultivating empathy brings social, political and professional change. Empathy has been a vital and moral force bringing about social and political change throughout history. While empathy is never the whole story, it has been a crucial factor in the struggle for human progress and continues to be a key driver of progressive change nowadays.

But what opposes the employment of the empathic stance is rationality. Rationality is the upside-down image of empathy; the end result of intensified rationality is the spreading of a urban sprawl. What we know as sprawl is a quintessentially culture of free individualism and rationalism. Sprawl eats up huge areas in very inefficient ways creating monocultures and furthermore, a sprawling metropolis generates isolation due to the lack of the perks of social life; but through empathy we adopt a dual-minded focus of attention that includes the consciousness of another individual. Empathy - with its foundation of both sympathy and compassion- is the backbone for the responsible citizenship that leads to practicing a moral and active citizenship.

> What is perceived as far can not be experienced through empathy

Stan Raucher (USA)

Avoid Naples! – *Series*

Stan Raucher (USA)

Kings Of The Road

Rob Krauss (USA)

Boredom

Rob Krauss (USA)

Max Alvarex (Spain)

Never Edit (Germany)

Georg Worecki (Luxembourg)

Gianni Olivetti (Italy)

Monkok

Lena Tsibziova (Russia)

Vecchiaia

Josefine Unterhouser (Germany)

Around 42nd 7th – *Series*

Hiro Tanaka (Japan)

Pretty Unknown

Manlio De Pasquale (Italy)

Untitled

Michele Palazzo (USA)

Untitled

Andrea Scirè (Italy)

The project

Urban & Human Empathy is the first photography project launched using the Exhibit Around platform. Focusing on the human presence in the urban environment, the project includes works by more than fifty photographers from around the world. Urban & Human Empathy is accompanied by an illustrious volume of photographs, presented during the Trieste Photo Days 2017 festival and displayed as part of a cycle of international exhibitions in Lodz and Krakow (Poland), Budapest (Hungary) and Trieste (Italy).

EXHIBIT AROUND

Exhibit Around

Launched by dotART in 2017, Exhibit Around is an online platform for identifying and promoting editorial and expository photography projects. Exhibit Around has several original active projects, bringing together hundreds of creators from all five continents: Urban & Human Empathy (2017), focusing on the human presence in the urban environment, and Flowing City (2018), created from words and images in black and white. October 2019 will see the launch of Short Street Stories, an ambitious collective homage to the street photography of Martin Parr, and Immigrantopolis, dedicated to the presence of immigrants in the urban fabric.

www.exhibitaround.com

dotART

Dot Art

This cultural association was launched in Trieste in 2009 and is dedicated to promoting initiatives that enhance support and visibility for professional and amateur photographers. Among the association's leading projects: Trieste Photo Days, an international festival dedicated to urban photography, and the URBAN Photo Awards, a competition with thousands of entrants every year from hundreds of participants from around the world.

www.dotart.it

SEE

CONFUSED BY ONLINE TICKET SYSTEM

HEAR

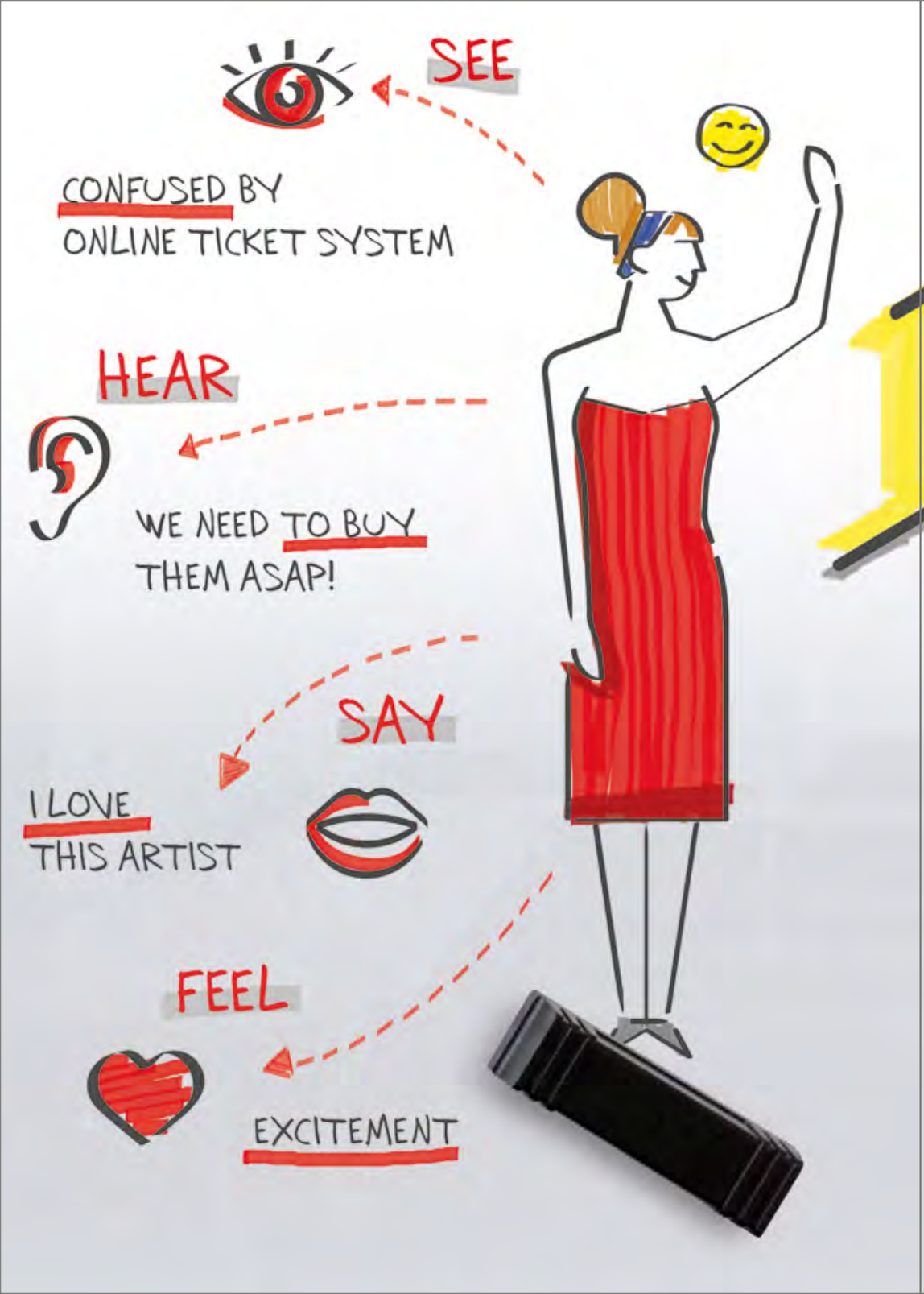
WE NEED TO BUY THEM ASAP!

SAY

I LOVE THIS ARTIST

FEEL

EXCITEMENT



Jane wants to go to the concert

A map to find the customer

As the name suggests, empathy maps help product teams build empathy with their end users — improving the team's ability to understand a customer's perspective.

by Nick Babich
– Blogger @UXPlanet

What is an empathy map?

An empathy map is a visual tool showing what the product team knows about a particular type of user. It can represent an individual user or a group of users, such as a customer segment. This tool was created by Dave Gray and was successfully adopted by product development teams that practice user-centred design. Empathy maps help the team find the answer to common questions about their users or customers:

- *What worries and aspirations does the user have?*
- *What thoughts and feelings will the user have while using the product?*
- *What might the user say and/or do while using the product?*
- *What pain points or fears does the user have when using the product?*

Finding answers to those questions increases the chances that the product will be accepted and used by the target audience. That happens because empathy builds trust.

Value of empathy mapping

Empathy mapping is an excellent way to put yourself inside your user's head. By analysing the empathy map, we understand what we need to do to make a measurable impact in the user's life. Here is a quick list of the benefits empathy maps provide:

FLICKR / MICHELLE MILLA

↑ Over
A portrait of Dave Gray, the inventor of the Empathy Map.

- They allow us to visualise what we know about our users. The empathy map helps the product team identify how much it actually knows about its users and discover gaps in user research.
- They are easy to create and refine. The empathy map has a simple format, and creating the map won't take too much time. Because empathy maps are quick to create, they are also easy to recreate as a product team gains more insight about its users. A product team can use the empathy map as a starting point to gather assumptions about their users and validate them later
- They can be a foundation for user-centred design. In UX design, empathy maps can be used to create a shared understanding of the user's goals and motivations. When the team creates a new product, each team member should remember a simple rule: You are not your user. The empathy map is a tool that helps the team switch from thinking about 'what we want users to do' to 'what users want/need to do and why.'

Visualize your who's perspective
what's going on in their environment
what do they think and feel.

The team can rely on empathy maps when making an important decision about the product's user experience.

The empathy map in the design process

While it's possible to use empathy maps in any stage of a design process, they are most useful at the beginning of the design process — when the team has the results of any initial user research but is still in the process of defining the product requirements. Empathy maps can influence product requirements

> The whole idea is to imagine what it's like to be inside someone else's head

— they can shed light on which problems to solve in the first place — and this can influence product strategy.

The format of an empathy map

A common empathy map consists of an image of the user surrounded by a few sections. While the number of sections can vary depending on the needs of a project, some common variants include four parts that represent a person's sensory experience: what that person says, thinks, does and feels.

- Says. This section contains the phrases that the user says during user interviews or usability testing sessions. Example: 'This app is so slow.'
- Thinks. This section contains user thoughts when they interact with a product. Users are not willing to express everything they think. Most probably you won't hear the phrase 'I feel so stupid' when the user interacts with a product. Such thoughts can only be guessed or inferred.
- Does. This section contains all the actions that a user takes when interacting with a product. Example: When the user tries to find a particular product in an e-commerce store, one of the actions is using a search box.
- Feels. The Feels section describes the user's emotional state when interacting with a product. How does the user feel about the experience? What frustrates/excites the user? Example: The user feels frustrated because she got an unclear error message while placing the order.

The central element of the map (the user's head) is one of the most critical aspects of the map design, since the whole idea is to imagine what it's like to be inside someone else's head. To help bring the user to life, you can sketch some characteristics this person may have. It is even better to provide an image of a real human because it will humanize the persona. The great thing about the empathy map is that it's a very flexible tool. If you feel that you need more detail or your project has unique needs, you can adapt the format by including additional sections.

Create an empathy map on your own

Empathy map can be created on your own or in a group. Let's start with the first approach.

1. Define goal

Before creating an empathy map, you should have a clear understanding of why you need to create one. It's vital to define a primary purpose for empathy mapping. There are two typical cases where you need to create a map:

- General understanding of your users. In this case, you might want to create a broad empathy map.
- If you want to understand a particular user's behavior. For example, user behavior in the context of a specific task or situation. In this case, you need to determine a question you have for that user (i.e. 'How the user will purchase a ticket?') and create a task-based empathy map.

2. Identify user segment

Now when you know your goal, you need to define who will be the subject of the empathy map. List the user segments and select the one that you want to focus on.

It might be tempting to create an empty map for a few user segments, but it's better to avoid that temptation. Mixing different segments in one map won't give you valuable insights. It's better to follow the rule 'one persona per map.' If you have multiple user segments, create a separate empathy map for each one.

3. Collect information about your users

Empathy maps work better if they're drawn from real data — data from qualitative research. Gather information from user interviews,

> Try to project yourself into a person's experience and start to fill in the map

user comments, or qualitative surveys. It's evident that the most valuable insights usually come from time spent listening to users. Try to collect data directly from the user — start your project by interviewing and observing current and potential users to understand them better.

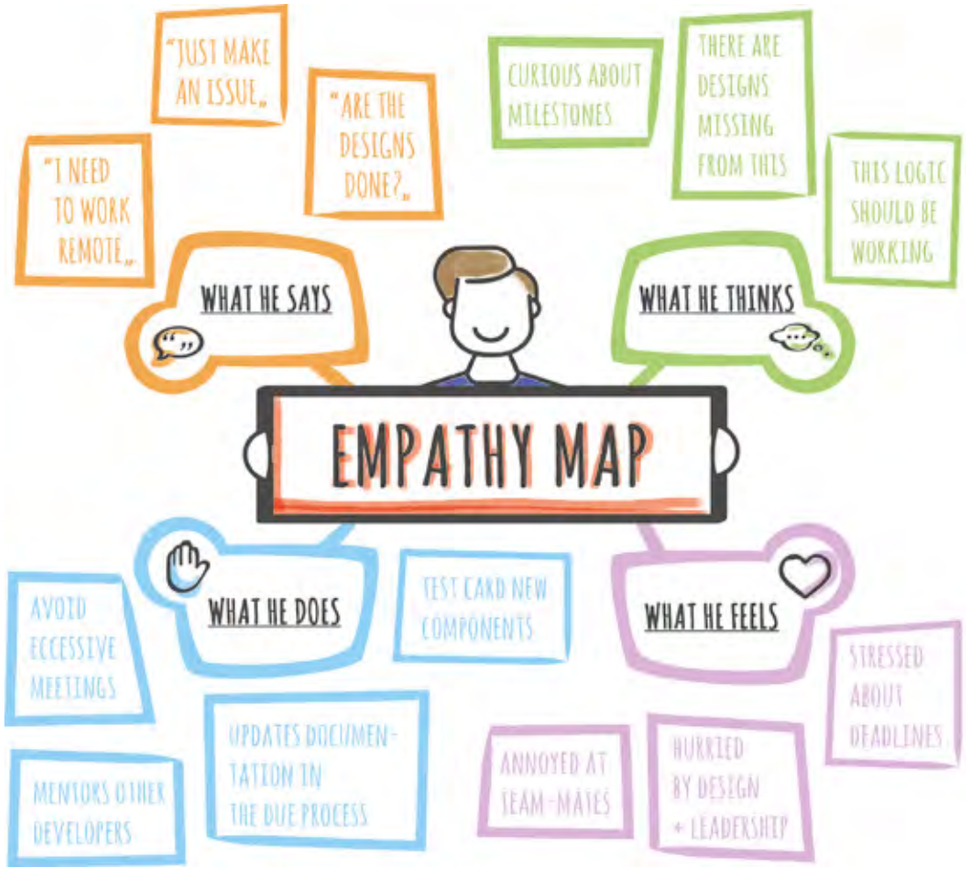
4. Create context

Take a user context into account when creating a map. The point of creating context is to empathize with the subject's situation.

5. Put your thoughts in the right section

Try to project yourself into a person's experience and start to fill in the map with real sensory experiences.

Sometimes it can be difficult to distinguish some thoughts about the user. Each time when you think that you have an overlap between sections try to follow a simple rule — if an item may fit into multiple sections, pick the one that seems to be the most relevant.



A sample Empathy Map with a developer in the middle.

6. Analyse your map

Pay special attention to inconsistencies between quadrants. Sometimes a positive action might lead to negative quotes or negative emotions coming from the user. The goal is to investigate what causes such behavior and resolve it.

Create an empathy map with a team

Design is a team sport, and it's essential that each team member thinks about the user when crafting a product. Creating empathy maps is a great team exercise that makes team members gather together and analyse information about users.

While most of the steps that we've covered above are valid for collaborative creation, some nuances should be taken into account.

Gamestorming is a set of practices for facilitating innovation in the business world. A facilitator leads a group towards some goal by way of a game, a structured activity that provides scope for thinking freely, even playfully. The word gamestorming itself, as a neologism, is a portmanteau suggestive of using games for brainstorming.

↑ Over
Young students involved in a Design Experience in Northfield, New Jersey.

Source: Wikipedia

1. Choose the right medium

When you create an empathy map on your own, you can use a system that works best for you. But if you work with a team, you need to find the medium that will work equally good for everyone.

The medium you choose should be based on your team structure. If you share the same physical space with your team, all you need is a conference room with a large whiteboard, sticky notes, and markers. You can use a whiteboard or flipchart to draw a template and sticky notes to share the ideas.

For distributed teams, it's possible to use online collaborative tools such as Realtime board.

2. Invite the right people

Invite people directly involved in the creation of the product (product manager, designers, developers, marketers). If possible, invite stakeholders to the session. Having stakeholders during mapping sessions is beneficial for two reasons. Firstly, it's possible to create richer empathy maps by balancing stakeholders' goals and users' needs. Secondly, it's possible to ensure that the product team and stakeholders are on the same page in terms of their understanding of users.

3. Make sure everyone is familiar with the research data

Before the session, everybody should read through the research individually. It will prevent team members from making false assumptions about users.

4. Make sure you will have enough time for the session

The discussion session shouldn't take too long – usually it takes about 30-60 minutes. To meet your goals, start on time and stay on time.

5. Make sure everyone participates in the activity

Everyone should record what they know about the user. Each team player should use one sticky note per observation and place it within the appropriate section. It's important to remember that there are not bad ideas. The team should discuss the ideas together and select the strongest ideas.

6. Encourage team members to talk about their thoughts

It's essential to have the team members talk about their sticky notes as they place them on the empathy map. By asking questions, it's possible to reach more profound insights which can be valuable for the rest of the team.

7. Cluster ideas

Within each section, cluster sticky notes that relate to each other.

8. Validate assumptions

Select anything on the map that might be an assumption and validate it with your team. It's possible to use a simple group exercise for that - chose one person from your team to play a user from an empathy map, while all other team players will question her behavior.

> Creating empathy maps makes team members gather together and analyse information about users

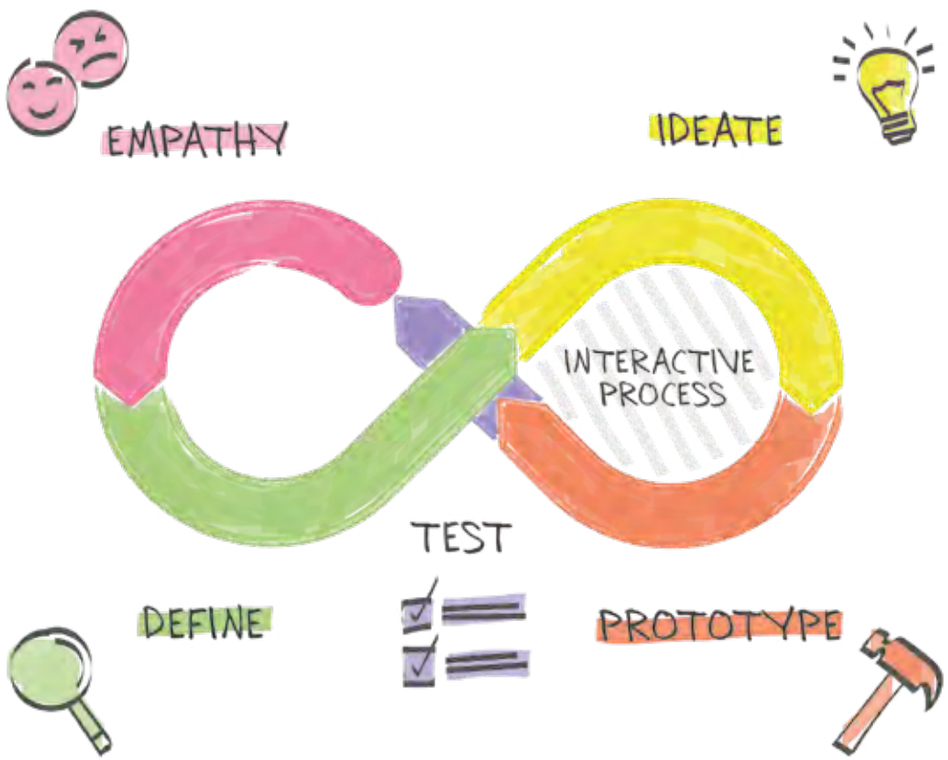
9. Summarise the results of the session

You'll need 15 minutes after the session to summarise all the findings. The goal of empathy mapping is not only developing a deep understanding of users; it's also in developing shared understanding. That's why at the end of the session, ask the team members what insights they learned. Even more important is to ask them what hypotheses they now have about the users that they'd like to validate.

User experience (UX) refers to a person's emotions and attitudes about using a particular product or service. Don Norman, the person who coined this term, defines UX as 'everything that touches upon your experience with the product.' That's why the true user experience goes far beyond giving users good usability (ability to use a product).

Empathy is the fundamental 'soft' skill product creators should possess. Empathising with users leads to a genuine understanding of how to solve their problems. When designers share the feelings and emotions of their users, it ultimately leads to building better products.

Definition of User Experience



Long term impact of empathy maps

The benefit of the empathy map doesn't end with the creative session. As a design artifact, an empathy map can be used as a reference during the product's development cycle.

Empathy maps are a live tool: As your understanding of users evolve, so will your empathy maps. As you do more research, don't forget to refine and adjust your empathy maps.

Make a poster out of empathy map: It's possible to turn empathy map into posters that can be displayed around the organization. The insights that you get about your users will influence the wider organization.

> Using empathy maps is a significant step in thinking with a user-first philosophy

Conclusion

Using empathy maps in the design process is a significant step in getting your product team to think using a user-first philosophy. When done well, empathy maps trigger a chain reaction that influences the entire project; better understanding of users will lead to better product requirements, better product requirements will result in better product strategy, and better product strategy will influence better product design.

Nick Babich

Nick Babich is a UX Designer who runs a popular blog about UX called UX Planet. He has spent the last 15 years working in the software industry with a specialised focus on design and development. He counts advertising, psychology and cinema among his myriad interests.

How do we communicate with a robot?

Kirobo Mini is a miniature robot designed by Toyota, just 10 centimetres tall and weighing in at 183 grams. Kirobo behaves like a rally co-driver: he calls attention to dangerous curves and tells you when you should slow down. From his vantage point in the cupholder of your vehicle, he monitors everything that's happening around him. He is able to express himself through speech and hand gestures, as well as understanding and reacting to human emotions.

REUTERS / KIM KYUNG-HOON

Is there one model we can call communication? We need a model for examining communication that is flexible enough that it can consider our interactions with machines.

by Marina Sbisà
– Lecturer in linguistic philosophy

1 — The headline of a push notification appears on my iPhone this morning: 'Boeing 730, pilots grappled with the computer for six minutes.' The malfunction of the computer or one of its programs is the most likely cause of the tragic incident referred to in the notification. The image it conjures up, however, is one of an enemy, a 'villain' against whom they fought to no avail. As if it were not a series of interlinked actions that caused the disaster, but rather ill-will on the part of the computer, standing firm in its murderous decision.

I open my computer to send an urgent e-mail. The message won't send, and a message appears: SMTP server unavailable. What does this mean and what should I do: just wait? Complain to the manager? How? I click to get on the Internet and begin the process: search engine, hopefully useful website, login, password, no help so I turn to another site, ad, FAQ, everything explained except the notice I received, a small icon at the bottom of the page to report issues, I open it and find a form to fill out... These are the small daily struggles: the FAQ that never answers your question, the websites that offer to sell you anything even though you're not looking to buy, the rigid and detailed forms that you can only send off and hope for the best.

And all of this is without having to resort to the faux politeness of a virtual assistant that hides the inflexibility of the site and the frustration of not being listened to behind a pseudo-human mask.

> Accepting the subjective nature of our interlocutor is an indispensable part of human communication

2 — These are images of communication between man and machine (dysfunctional communication, to be precise). Whether functional or otherwise, however, this type of communication is omnipresent in our lives, wherever we turn our gaze. It is also embarrassing in some way: is this 'real' communication? Will having to communicate with machines, and having technological mediation in communication between humans, lead us to forget how to 'really' communicate?

Is there truly one thing we can call communication? We need a model to examine communication that is flexible enough that it can consider our interactions with machines.

Face-to-face interaction between individuals is often described as an exchange of signals that, when decoded or interpreted, allows each of the participants to infer the psychological state of the other. The recent field of 'cognitive pragmatics' is a firm proponent of this aspect. Others see communication as having a reciprocal influence: each of the participants seeks to influence the beliefs and behaviour of the others through the medium of a system of signals. Here, too, everything begins with the intentions of the participants as devised in their own brains, but their interpretation of the signals is seen as a response that is often associated with them. A more complex and holistic interpretation of communication that places less of an emphasis on inferences about the participants' thought process comes from the field of microsociology. This perspective sees exchanges of communication, or conversations, as social events in which participants coordinate and use implicit negotiations to create a shared intersubjective understanding of the situation and of what is said and done within it. The linguistic system also has

a role to play in this model, alongside non-verbal signals. Establishing meaning must also take into account the context of the chosen words. Above all, this meaning changes in different ways depending on how its contribution to the linguistic exchange plays out within the framework of the interpersonal relationships between speaker and interlocutor.

Recognising the inherently subjective nature of the interlocutor is indispensable to communication (and with it, the pretence that one's own subjectivity comes from the recognised interlocutor). This recognition can work on many levels and in many forms: it means recognising that the other person has their own perspective; that they are competent speakers of the language in which the exchange is taking place and therefore able to understand and to produce grammatically accurate sentences; that they are able to reason and that there are motives for what they say and do; that they have rights and responsibilities, including the necessary qualifications for carrying out the linguistic actions indicated by the words they use (authority if they give instructions, understanding of the topic if they make assertions or provide explanations, the ability to manage their time if they commit to something, and so on). Such recognition is rarely made explicit, largely because it is rarely the subject of open discussion. It may be considered obvious, unless you know through other means that one of the participants does not possess one or more of the relevant characteristics. Without this recognition of subjectivity, linguistic actions cannot be carried out in the valid manner we would usually employ in a conversation, which include not only making available informative content, but also conferring or suspending rights and responsibilities of various types for oneself and for other participants.

3 — The idea of communication as an inferred reconstruction of what others have in mind (i.e. mindreading) can create a deep sense of uncertainty: can we ever truly know what they mean to say? Taking the empiricist's hypothesis that we know what we have personal experience of, if we consider that each subject has experience only of what is in their own heads and not of the cognitive state of others, is it possible to feel a degree of scepticism regarding the possibility of communication, if not to go further into philosophical scepticism regarding the existence of others (and what if the other subjects were not actually there?). And indeed, how does the subjectivity of others manifest itself? We see only the manifestations of the subjective lives of others, and if these are not to be taken as an integral part of a subjective life to be recognised in its entirety, but rather as a base from which to extract inferences, the understanding we would glean from this would always be judged uncertain and insufficient. Insofar as communication between human and machine is concerned, as long as the machine has no cognitive state or subjective perspective, the idea of communication as an inferred reconstruction of the cognitive processes of others becomes unsuited in helping us to understand what is happening. At most, setting aside scepticism could open us up to doubt: what if the machines, at least a select few, particularly complex ones, were actually subjects?

> And what if machines were essentially people?

The idea of communication as a reciprocal influence would seem to be highly suitable to adaptation to human-machine interactions. If anything, its flaw is reducing communication between humans to the same mechanistic dimension of the reciprocal causal influence.

Avatarmind's iPal Smart AI Robot, a teacher for children with spoken language learning and tablet-based educational programs, provides educational content in an engaging manner that supports social development and encourages interest in science and technology.
Many elders are alone and lonely. They often have problems keeping track of everyday activities, such as taking their medicine. iPal is a constant companion that supplements personal care services and provides security with alerts for many medical emergencies such as falling down.

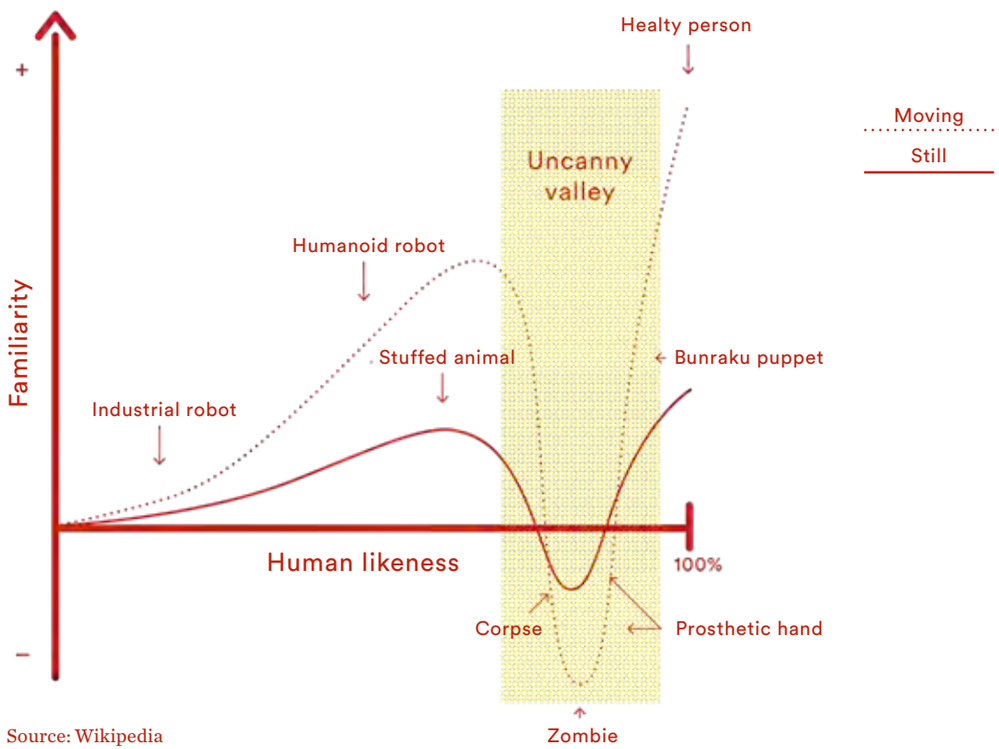
Source: www.ipalrobot.com

The uncanny valley was a thesis advanced by the Japanese robotics engineer Masahiro Mori in 1970 and published in the journal Energy. His research experimented with the feelings of familiarity and pleasure that a group of people derived from robots and anthropomorphic automatons as they increasingly resembled human figures, up to the point where extreme realism produced a sharp drop in positive emotional reactions, to be replaced instead by negative emotions of repulsion or discomfort owing to feeling disturbed.

His graph's X-axis showed the increasing resemblance to a human being of various objects or situations to which the group of individuals analysed by Masahiro was exposed, and the Y-axis showed the pleasant feeling of familiarity (empathy) felt by the same group. The line it traced, ascending at first, demonstrated an initially positive emotional response in the case of self-propelled anthropomorphic automatons, which increased in line with their growing similarity to human attributes, until a point at which the excessive similarity produced a sharp drop ('area of repulsive response') in the curve. This continued until it reached a negative value corresponding to a negative emotional impact (repulsion, upset) experienced by the group. The most significant adverse reaction was to personifications of zombies.

The effect described by the uncanny valley has been cited by many researchers in robotics and is often taken into consideration in the aesthetic design of a robot, when deciding on the desired degree of human similarity. A study conducted by the universities of Osaka, Kyoto and San Diego reported that the potential for an automaton to fall into the area of repulsive response decreased if its movements and gestures accurately replicated those of a human, in such a way as to appear natural.

Uncanny valley



Source: Wikipedia

In practice, this removes or at least sidelines the truly subjective aspect of our knowledge, beliefs, emotional reactions and decisions.

On the other hand, the idea of communication as a social event in which multiple participants coordinate and negotiate a shared reality accepts the simple premise that, in a shared life, we must consider the existence of others and accept them as subjects much like ourselves. Regardless, we attribute subjectivity to other humans and we base our behaviour towards them on it. Occasionally a word we speak gets overlooked — they appeared to be listening but were distracted, appeared to have understood but don't have a strong enough grasp of the language — but only occasionally. The cause of the failed recognition, which is usually only partial, is feedback that is non-existent or insufficient in some way. With a word of caution, this idea can also be extended and modified to include interactions between humans and machines. The recognition of subjectivity implied here takes on the same appearance when applied to a machine as it would when applied to a fellow human. There will undoubtedly be something missing in this scenario. It won't invite recognition on the same level, if we take into consideration that the machine lacks a perspective of its own, for example (although it does have the perspective of the human who programmed it). Formally speaking, however, the process of recognition remains the same. The coordination, the type of coordination, takes different forms depending on the type of machine in question, but it cannot help but be an analogue, turn-based conversation. One move will lead to another, ambiguity or misunderstanding will require repetition and reformulation, until the sequence of acts and effects at the heart of the interaction reaches its conclusion, whether it be positive or negative. In practice, we treat the machine like a partner, like our co-participant in a discussion. This is how we interact, with other human beings and with the world.

4 — Whilst on the subject, it may be worth pausing to reflect on the myriad interactions with machines in contemporary life, daily or otherwise. There are simple tools, even mechanical ones, which are a simple extension of the human hand, providing increased strength or speed: a hammer, a screwdriver or a whisk. The next step up in complexity would be a drill, electric screwdriver or mixer. Beyond

> The delegation of tasks is steadily increasing, and with it, so does the machine's responsibility

the increased power, there is also an element of delegation, with commands (on/off, increase/reduce speed) that the machine responds to, despite the fact that it still requires physical support. When a machine is programmed to carry out a series of functions in relative autonomy (e.g. a washing machine with pre-wash, wash, rinse and spin cycle), the amount of

↑ Over
Debut ad for the Hoover Model 29, the first Hoover cleaner made in red (1950).

→ Right
45 minute exposure of Roomba cleaning a room. The Blue circles that come from the Roomba spot cleaning. There is no extra lighting. This model roomba has a primary ring in the middle that shows yellow when running and orange when low on power. A smaller blue light manifests when it has detected significant dirt.

independence delegated to the machine slowly increases in line with its responsibility for success or failure. Then there are devices that take in information from the surrounding environment in ways that are unavailable to us (I feel hot, a thermometer measures my precise

> Above a certain level of complexity, we are compelled to speak to it as if it were an individual

temperature), that react to changes in the environment by activating other measures (a thermostat), or can even take decisions to achieve a predetermined outcome (a camera with automatic exposure and focus; autopilot). And there are devices — or programs within devices — that are pre-programmed to 'communicate', offering the user a form of linguistic interaction.

Once we exceed a certain level of complexity on the part of the machine, we begin to anthropomorphise it, speaking to it as if it were a subject that must or must not, or wants or does not want to do something. We believe that the machine 'obeys' our commands (doing what we have instructed it to do) or, if it does not, that this is because it 'does not want' to do so. Anthropomorphic subjects and ideas also creep into our discourse when referring to inanimate, non-artificial objects, and we do not always see them as metaphors. However, while we would think twice before attributing willpower to them, with machines we have no such hesitancy. This is increased when we interact with electronic devices that have their own code and information that we cannot control. In these interactions, we attribute to them knowledge or beliefs, abilities and preferences, and an understanding (or lack thereof) of our instructions and analysis similar to what a human interlocutor would possess. And so, when we discuss human-machine interaction, we are not necessarily talking about incredibly advanced technology and robots in possession of self-awareness. Rather, it is something rooted in our tendency to develop an emotional bond with complex tools with a certain amount of unpredictable autonomy, interpreting these as the actions of a subject interacting with us.

Which is to say, the tendency may be ours, but the interaction is real, insofar as it takes place between ourselves and the machine and includes our behaviour as much as the machine's function. Our approach to the machine helps to shape the nature of this interaction, and therefore it may contribute to its outcome in addition to our perception of its use. We are light years away from the aesthetic anthropomorphism of virtual assistants, whether visual or vocal.

How do we communicate with a robot?

Connected Home
(18% CAGR)

Connected Work
(15% CAGR)

Connected Health
(30% CAGR)

Connected Cities
(29% CAGR)

Connected Car
(29% CAGR)

Retail
(15% CAGR)

Mfg and Supply Chain
(9% CAGR)

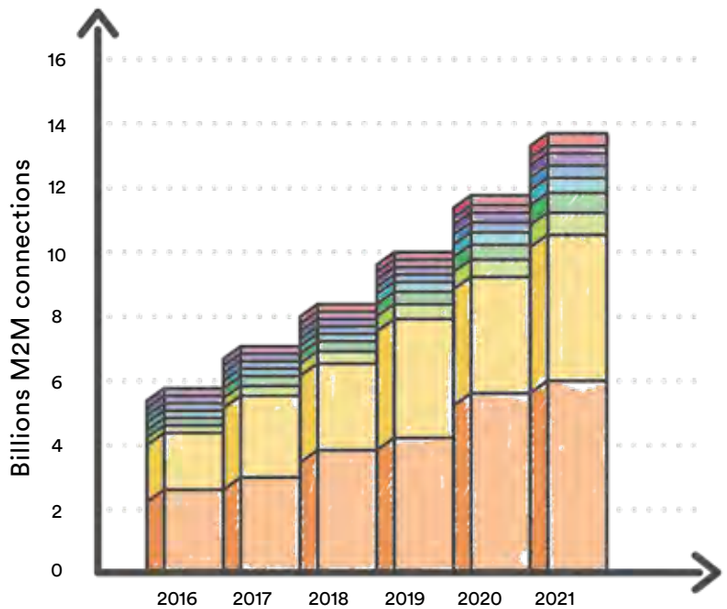
Energy
(25% CAGR)

Other*
(1% CAGR)

Other* includes Agricolture, Construction and Emergency Services

19% CAGR
2016–2021

Due to the ever expanding applications of AI, it'll not only change our workplace but will also change the way we live in our homes. According to Cisco, connected home applications such as home automation, home security and video surveillance, connected white goods, and tracking applications, will represent 46%, or nearly half, of the total M2M connections by 2021.



CAGR (Compound Annual Growth Rate) is a business and investing specific term for the geometric progression ratio that provides a constant rate of return over the time period.

M2M (Machine to machine) refers to direct communication between devices using any communications channel, including wired and wireless.

Source: Cisco VNI Global IP Traffic Forecast, 2016–2021

Despite their ability to imitate a polite conversation, they are only able to assist us when our request happens to correspond to one of their pre-programmed responses.

This is not about programming the machine to fake humanity, but rather about improving it as a machine in a way that is dynamic and interactive (or to programme it to do so). If something is delegated to it, this means

> This isn't about programming a machine to imitate humans, rather about making it as close as possible, while still a machine.

recognising it as a subject of its action while maintaining informed and competent oversight. We can therefore see how something resembling empathy can also become part of a human-machine relationship.

There is a recognition here of subjectivity in all its forms. We should not, however, expect the relationship to be mutual: the best feedback we could hope for, which under certain circumstances could also provide emotional satisfaction, would be the accurate completion of the requested task within the limits of flexibility and adaptability previously programmed into the device by another human.

Marina Sbisà

Marina Sbisà is a linguistic philosopher and contract lecturer in the Department of Humanities at the University of Trieste, and she held the position of Professor of Philosophy and Linguistic Theory until November 1, 2018. She is a board member with various journals and international scientific publications as well as a member of the board of the International Pragmatics Association, and she is president of SWIP Italy (Society for Women in Philosophy). She has conducted research in linguistic philosophy, semiotics, discourse analysis and gender studies. Her primary field of research is linguistics pragmatics, an interdisciplinary field at the intersection of philosophy, linguistics, sociolinguistics and cognitive psychology. Her work is inspired by the pragmatic philosophy of J.L. Austin and H.P. Grice. She edited (with J.O. Urmson) the revised edition of Austin's posthumous work How to do Things with Words (Oxford University Press, 1975, translated into Italian as Come fare cose con le parole, edited by C. Penco and M. Sbisà, Marietti, 1987). Her own works include Linguaggio, ragione, interazione, Il Mulino (1989; e-book edition, EUT, Trieste, 2009) and Detto non detto. Le forme della comunicazione implicita [Said/unsaid: The forms of implicit communication] (Laterza, 2007). She discussed recognising subjectivity (as in this article) in scientific articles including 'Soggetto e riconoscimento [Subject and recognition]' (in Semiotica delle soggettività [Semiotics of subjectivity]) and For Omar (I Saggi di Lexia [Lexia's Essays], 11), edited by M. Leone and I. Pezzini, Aracne, Rome, 2013, pp. 169-191).

Visitors experience facial recognition technology at Face++ booth during the China Public Security Expo in Shenzhen

Data, like gold and oil

REUTERS / BOBBY YIP

The Asian economies' race for Artificial Intelligence leadership

by the Editorial Office

For many years, Artificial Intelligence (AI) – an area of information technology that develops technological systems able to autonomously carry out tasks and activities typically performed by the human brain – has been recognised by state and economic leaders as one of the major driving forces of innovation and development. AI technologies promise, and partly deliver, a wide range of applications: from Artificial Intelligence Marketing (AIM) to logistics, from health care to financial services and financial technology (Fintech). The race to adopt AI and achieve leadership in this sector involves both the West and Asia in terms of investments and start-ups: the number of 'young' businesses in the AI field is an important indicator of the sector's development in individual countries as well as the level of preparation and specialisation of their respective work forces. According to a study of European political institutions by consulting firms Roland Berger and Asgard Capital, today the USA is the undisputed leader with over 1,390 start-ups active in the country while China is the runner up with 383 start-ups. Other leading countries include Israel (362 start-ups), the United Kingdom (245), Japan (113), India (82) and South Korea (42). Beijing, Tokyo, Shanghai, Shenzhen, Seoul, Singapore and Bangalore, which collectively host over 500 businesses in the field of AI development and its applications, are among the Asian cities disputing the status of regional AI hub.

> The number of 'young' businesses in the AI sector is a vital indication of the sector's development

South-East Asia has been investing in the sector for many years and has seen a constant increase in the output of patents since 2013, according to a study published by Clarivate Analytics. The region has produced 24,000 patents in the AI field, 86 percent of which are from Singapore,

REUTERS / PAUL HANNA

Chatbots that provide e-commerce related services are also said to practice conversational commerce. AI based e-commerce bots predict what kind of products the customer is looking for, and NLP technology understands the customer's intent: whether they want to buy the item or compare it with others.

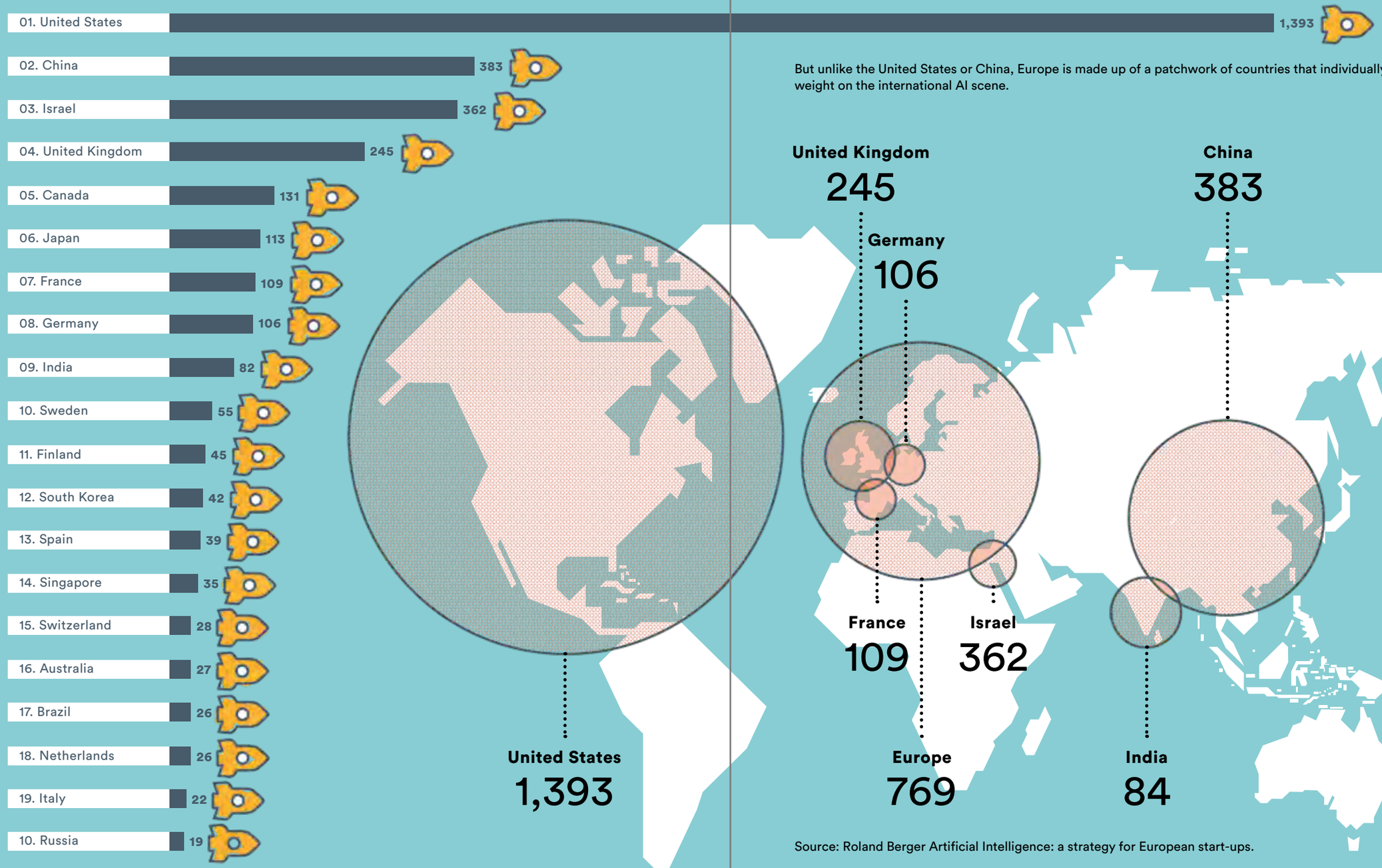
↑ Over
Commerce Bot, a robot that provides customer service with artificial intelligence technology and voice recognition, is seen at SK Telecom's stand at the Mobile World Congress in Barcelona, Spain.

The race for leadership

Global distribution of AI start-ups

The investigation reveals uneven development of AI across countries, and different levels of maturity across industries and technologies. Contrary to popular belief, the European continent as a whole is not lagging behind the rest of the world. Indeed, it ranks second in terms of the number of AI start-ups located here.

Top countries



But unlike the United States or China, Europe is made up of a patchwork of countries that individually have little weight on the international AI scene.

Source: Roland Berger Artificial Intelligence: a strategy for European start-ups.

Huawei is China's most valuable technology brand, and sells more telecommunications equipment than any other company in the world, with annual revenue topping $100 billion U.S. Headquartered in the southern city of Shenzhen, considered China's Silicon Valley, Huawei has more than 180,000 employees worldwide, with nearly half of them engaged in research and development.

↓ Under
Women sell vegetables in front of a billboard advertising smartphones for China's Huawei Technologies Co. in Mangshi, Yunnan Province, southwestern China.

GETTY IMAGES / KEVIN FRAYE

Malaysia and Thailand. Singapore alone produced 77 percent of the total number of patents from the ASEAN area and over 40 percent of research in the field. However, in South-East Asia, as well as Japan and India, there is a lack of public fund investments such as that supplied by the Chinese government: last year, Beijing implemented a three-point plan to secure global leadership in the field of AI by the year 2030 with the aim of creating a 150 billion dollar market. The plan's first phase, forecasted for the year 2020, will develop new generation AI theories and technology in order to reach a turning point over the following five years and 'update the industry and achieve economic transformation'. The plan is powered by ambitious investments, such as the 2.3 billion dollars for a new AI research centre in Beijing and the 5 billion dollars for a second hub in the port city of Tianjin. According to estimates from the Asia Times, Beijing has provided over half of global investments in the field of AI over the past five years. However, China still has to face significant structural disadvantages, such as the lack of chip ownership. Large enterprises such as Baidu, the e-commerce giant Alibaba and household electronic appliance producer Gree Electric Appliances have started taking initiatives in an attempt to solve this vulnerability. Huawei Technologies issued a challenge to the main global producers of semiconductors by introducing the Ascend 910, a microchip designed for AI in data centres which the company claims offers the highest computing

> Over the past five years, Beijing has received half of global investments in AI

density in the world. Asia's major economies are attempting to keep up with China. In order to avoid losing its status as leader in the semiconductor sector, South Korea, with nearly 100% of internet penetration and the first national network, will invest 2 billion dollars in AI research by 2022.

Japanese government investments in AI equal just 20 percent of Chinese investments, whereas private investments reach 5.4 billion dollars. The Japanese government has entrusted development to businesses and academic institutions and is concentrating on paving the way for the definition of AI operational regulations, an as yet undefined field aimed at dealing with issues such a privacy. Japanese progress in these regulations has attracted the interest of the European Union, said European Commission Vice President Jyrki Katainen in October. The EU and Japan signed an economic partnership agreement this year and committed to continue dialogue regarding industry and trade. Katainen participated in the first of these dialogue sessions which was also attended by Japan's Ministers of Foreign Affairs and Economy, Taro Kono and Hiroshige Seko. AI is a priority topic in the dialogue, said Katainen. Tokyo has already set up a committee for the regulation of AI linked technology. Last month, the committee adopted a draft of new legal guidelines prohibiting any violation of fundamental human rights by AI and citing the importance of carefully managing personal information and guaranteeing the security of AI.

> Tokyo has adopted a principle that forbids AI from violating fundamental human rights

Singapore is an island city-state off southern Malaysia that is not only a wealthy high-tech manufacturing hub with the seventh highest GDP per capita in the world, but it's also home to the 12th largest start-up ecosystem in the world. Moreover, the Intellectual Property Office of Singapore (IPOS) has announced that innovators can expect their AI patents to be granted in as little as six months, compared to a typical period of at least two years or more. This will allow Singapore to have the fastest patent application-to-grant for artificial intelligence in the world.

Source: sbr.com.sg

ALAMY / CHAD EHLERS

The art of video games

GETTY IMAGES / THIERRY FALISE

A new way of communicating a message that makes us more aware of risks threatening the planet

by the Editorial Office

Video games for appreciating the planet

'Tree', a virtual reality experience designed by two artists, Milica Zec and Winslow Turner Porter III, lets you have the unique experience of being transformed into a tree. Presented at the Sundance Film Festival, Tribeca, Cannes, and the Internazionale Festival in Italy, the few minutes which cover the lifespan of a tree turn into an experience that seems to last a century, with all its splendour: smells, giddiness, sounds, noises, the icy air of the wind that rustles through the branches - which are an extension of your own arms. Through the headsets and an extremely sophisticated software that functions through a machine that is placed on your shoulders, participants can have the exhilarating experience of

ALAMY / ZUMA PRESS

> The experience leads us to understand what it means to be part of the plant life in a vast forest

understanding what it means to be part of the flora of a large forest. The work of Milica and Winslow is the second in a trilogy that effectively communicates, beyond just the life of a plant, how much danger we pose to it: by cutting it down, carving it, burning it. The participant does not arrive at this point, however, after emerging from the experience, he/she has a slightly better understanding of the planet, which truly remains in the head and heart.

REUTERS / MARCOS BRINDICCI

Ecological video games

Virtual reality is making huge strides and is not just a way of playing that involves all our senses. It is obviously also a way of communicating. And it is not the only one. The forerunners of these new sensory experiences are the 'old' video games, in which you move the ball or drive a car on the tracks of Monza or Dubai. But now people are studying both virtual reality and video games for delivering a message in order to make us more aware, even from the time we are children.

> There are those who study virtual reality and video games to raise our awareness beginning in childhood

Professors and students in the EarthGames program at the University of Washington, for example, are working on a new way of interpreting video games in order to engage children and adults regarding the causes, impact and, of course, solutions to reduce the risks from climate change. The main characters can be animals, environments, or homes in which energy saving actions can be taken. 'EcoTrivia: Save the Animals!', for example, is a cartoon in which the animal characters provide short lessons on the climate. In another video game, the player can choose how to help scientists save the world from drought, rising water levels, and global warming. The game won first place in the National Climate Game Jam, an event whose sponsors include the White House.

Josh Lawler, founder of EarthGames and co-director of the Centre for Creative Conservation at the University of Washington, explains that the EarthGames' motto is: 'We can change the future through video games'. In an interview with Lisa Stiffler for GeekWire, a Technews & Business magazine, Lawler observed: 'The challenge is to take a serious topic and make it really fun. There were already some video games linked to climate and maybe one or two were OK but the rest were miserable. We thought, someone has to be able to do better'. Said and done, two years ago the project launched with Lawler and Dargan Frierson, associate professor in the university's Atmospheric Sciences Department, and a video gamer himself. Then other teachers and students were enlisted to create a team that produced the first games.

Through VR, young people have witnessed the melting of the icecaps, swam in the Great Barrier Reef to see the effects of receding coral on the ecosystem and rubbed shoulders with great primates whose habitats are being cleared by deforestation. Using VR, we hope to cultivate environmental responsible behaviour before attitudes and habits become more fixed.

← Left
Icebergs floating in Jokulsarlon Lagoon near the southern coast of Iceland.

↘ Next
Pacific Ocean, shoal of fish near Palau, about 500 km east of the Philippines.

Ethical video games

Another similar initiative is the outcome of a partnership between the World Tourism Organization (UNWTO) and Niantic Inc., an American software development company based in San Francisco, which is famous for developing virtual reality games that can be played on mobile devices, such as Pokémon Go, Ingress Prime, or Harry Potter: Wizards Unite. Here there will be no witches, wizards or strange creatures, but environments and situations that aim to improve the quality of global tourism through the use of virtual reality gaming experiences. The campaign is called 'Travel.Enjoy.Respect' and was designed by UNWTO in line with the concept for tourism contained in the 2030 United Nations agenda for sustainable development. By travelling virtually in an informed manner, perhaps we can do so also in our real journeys.

ISTOCK / GLOBAL_PICS

The Team

Published by
Assicurazioni Generali S.p.A.
Piazza Duca degli Abruzzi, 2
34132 Trieste, Italy
VAT No. 00079760328

Editor in chief
Simone Bemporad

Editorial staff director
Roberto Alatri

Editorial advisor
Christian Rocca

Editorial office
Group Communications & Public Affairs
editorial.communication@generali.com

Content Manager
Alberto Paletta
alberto.paletta@generali.com

Project Manager
Alessandra Gambino
alessandra.gambino@generali.com

Editorial and graphic project
Acrobatik — Trieste, Italy

Language support
Linklab — Trieste, Italy

Printing
Art Group Graphics — Trieste, Italy

Thank you

Gabriele Allegro, Carlo Castorina, Giuliano Cossu, DotArt, Exhibart Around, Emanuele Giordana

Poste italiane s.p.a.
spedizione
in abbonamento
postale 70%

CNS PN six-monthly
il bollettino
– July 2019

Aut. Trib. Trieste
n.83 – 2.8.1950

Awards

2017 / 2019

2018

2018

2017

2017

2017

Enviromental certifications

MIX
Paper from responsible sources
FSC® C134767

ELEMENTAL CHLORINE FREE GUARANTEED

ACID FREE

LONG-LIFE
ISO 9706

HEAVY METAL
HM ABSENCE
CE 94/62

POSTE ITALIANE S.P.A. – SPEDIZIONE IN ABBONAMENTO POSTALE – 70% CNS PN
SIX-MONTHLY – il bollettino – July 2019