## Speaker 1 (guest)

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## Speaker 2 (intro)

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Whether entrepreneurs, people from the world of business or researchers, On The Way gives a voice to those who, day after day, are helping to develop more sustainable consumption.

Welcome! And I hope you enjoy listening.

## Speaker 1 (guest)

My name's Catherine Muller, and my history with psychoanalysis began long before I was born. It all began during the Second World War, as I was born into an Alsatian Ashkenazi Jewish family who endured the Holocaust, and who, as you can well imagine, greatly suffered from it. So in fact, I grew up surrounded by people who'd either returned from the camps, in the state that you'd imagine people returning from camps would be in, or who'd spent the years during the occupation hidden in cellars or attics, or for other people, as was the case with my father and my mother, either in the maquis, or in a resistance network. Don't forget that my parents' generation were those born in 1920, so they were barely teenagers when war was declared, and when the war broke out and they were either hidden, fighting, or trying not to die in a concentration camp, they weren't even adults yet. So it played a major role in how their personalities were formed, or indeed not formed, in other cases. And I know what post-traumatic stress syndrome is because I fell into it when I was very young.

Growing up in this family, traumatised by the Holocaust as you can imagine, my grandfather raised me with the idea that I had to have a job that would be entirely contained in my mind, and that I could do anywhere in the world. That was in case I might have to leave with just a suitcase and move countries, which is what happened to him. So the only job that you can keep entirely in your own mind, and that you can do anywhere in the world, is being a psychoanalyst. That's also why there are so many Jewish psychoanalysts. So I became a psychoanalyst.

At the start of the pandemic, during the first lockdown, which was really quite strict, I blessed my grandfather every day because I was able to practise my profession on the phone with my patients. So I didn't have to leave them, I could carry on looking after them.

The reason we've been on earth for so long, and also evolved in a way that's absolutely extraordinary, is because we have a brain with a marvellous capacity to adapt. Change is one of the adaptation strategies, but it's not the one that the brain chooses first because it's the most anxiety-inducing and the most costly in terms of energy. So in fact, the brain only changes when it has tried out all the other strategies and they've turned out not to be rewarding enough. When all adaptation strategies have failed, knowing that adaptation, roughly speaking, is like DIY, when all the other DIY has failed, the brain brings out its most heavy-duty equipment, which is that of change strategy. First of all, change strategy is anxiety-inducing because the brain doesn't really like going to places it's unfamiliar with, it likes sticking with what it knows, going where it's used to going, using the pathways it's used to using, and when it's obliged to do so, change always happens in four necessary stages.

The first is the most enjoyable, and it particularly applies to people who want to change their behaviours so as to protect the environment, or have a better diet, or be healthier.

The first step is total enthusiasm, because it's all "I'm going to change everything", "my life will be different", "I'm going to be happy", "everyone around me will be happy", so it's a moment of great enthusiasm. There's a very special hormone, which is adrenaline. It's a hormone that gives you a boost. You feel like the world is so small that you're going to dominate it all by yourself. That's the first step, and of course it's very important to start things off, but the problem is that it's such a moment of enthusiasm and excitement, that it dies down straight away.

So that first stage is relatively short-lived, it's the moment when the person makes the decision, and maybe you know people, I've already met some, who make a decision in the evening, and in the morning when they wake up, it's already over. Their adrenaline has diminished, so they go back to their usual lives. This first stage, enthusiasm, is important, so as to trigger everything else, but it's not enough.

Next, you have a second stage, which is the most difficult, and there are a lot of people who never get beyond it, and that's the discouragement stage. Because after having told yourself that you were going to change everything, that you were super-powerful, that everything was going to be great, you realise that, especially in terms of changing your eating habits, for example, where you go to buy your clothes, or things like that, you're going to find that it's really, really hard. For example, I'm very sensitive to what we call fast fashion. Because it affects children. In a way, if I had to make up a slightly brutal slogan, I'd say "every time you buy a 5-quid t-shirt, you're killing a kid on the other side of the world." This topic's really important to me. On the other hand, when you could go and buy a 10-quid t-shirt, the idea that you're only going to go buy 45 pound ones, because you can be sure that they're made in conditions which respect the environment and that don't cause cancer in young children, it's not all that easy a decision to maintain going forward on a daily basis.

This is the phase when we say to ourselves "it's going to be really difficult", and, basically, "why am I doing it?", "my friends don't do it", "is it really all that necessary?", "if no one else does it, then there's no point in me doing it." At this point, your brain produces a very special hormone, the depression hormone, the discouragement hormone, which is called cortisol. Hormones are neurotransmitters that your brain uses to give orders to the rest of your body. What orders does adrenaline give to your body? It says: "come on, go ahead, run, climb, jump, you're the best, you're the strongest!" Cortisol has exactly the opposite effect: it extracts all the glucose from your body, and in particular from your muscles, so you're going to get a feeling of immense fatigue, and you're going to tell yourself that even "getting up and opening the door that's right next to me, I can't do it, I'm too tired." And that moment is the crucial moment, it's almost the most important part of the process, because those people who can't deal with it - because you're going to have to deal with it, it's all about willpower - and people who fail to keep going at this stage will never move on to either the third or the fourth stages. And since the brain won't have had its reward, it will never try it again. It will, in its own way, be vaccinated against enthusiasm.

At this stage, the people around you are very important. I've often advised this to my patients, and I've met a lot who have done it themselves, and that's deciding to do things in a group: a group of friends, a group of couples, being part of a group, because there's this image of the others supporting you. "If the others are doing it, then I'll carry on too." And since everyone says to themselves "I'm going to carry on" because the others are going to, in the end the group works. There's a social entourage aspect in moving from step 2 to step 3, which is really very very important. And I think

people who want to change on their own can't do it, it's too hard. Change is also a change in the view of others. You need other people to tell you, "that's really good, I'm going to do the same as you", and suddenly that gets you past the discouragement phase, because cortisol production stops.

And then we move on to step 3, which is anticipation. This is the time when things are going to get real. Because at first, when you say to yourself "I'm going to change everything, I'm going to throw out all my toxic chemical products, I'm going to make them myself", you might feel like it's really easy, but it's an idea of an idea. You have an idea that you are going to change something. But the idea of the idea doesn't let you to move on to putting it into practice. The idea of an idea must become a real idea, i.e. a project, in order to put it into practice. And a project is something that's divided up over time: "I'm doing this today, tomorrow I'll do that, the day after tomorrow I'll do this...", so it's really a question of anticipation, with a single, ultimate goal, and intermediate steps to make sure you reach your goal. This is the third step, anticipation.

It requires a lot of consistency and determination, because you have to do it step by step and very systematically for it to work. This is where we're going to trigger the brain's reward circuit: this makes you feel happy or unhappy, which causes you to stop or to carry on. From the moment you start doing things and getting results, even if they're small results, your brain will continue to seek its reward. Once it realises that if it does something new, it's going to get a reward, it's going to self-program itself to go out and get it.

This is the third phase, where you stabilise things and say, "okay, this is more difficult than I expected, but I can do it, and I will do it."

In step 3, you produce the mood hormone, serotonin. This plays a very big part in regulating mood, and when you're in a construction stage, it's very important that your mood is stable. You mustn't take two steps forward and three steps back. Serotonin ensures that you stay in a stable mood and that once you take a step forward, you're not going to take two steps back. This is the phase that takes you to the next stage.

The next stage is the most interesting: satisfaction. This is the time when you experience the joy of what you've achieved. So there's a feeling of fulfilment, and that corresponds to a hormone called oxytocin. Oxytocin is the basis of lactation, and it's what a mother and child produce when a mother feeds her baby. And I think everyone's seen a baby that's just been breastfed, and their face. It's absolute bliss. This bliss is linked to the fact that you produce oxytocin.

Oxytocin is your brain's absolute reward, it's what it prefers most of all. And so, from the moment your brain understands how it found its reward, it will go out looking on its own. It's as if your brain was bathed in oxytocin at that moment. It's like you're in a bath of hot water, and your brain's so happy that it comes up with the idea "well in the end, that's already really, really good, but maybe things can be even better." So if I want to be happier, I have to go through the four stages of change, starting with something more difficult at the beginning. Because it's going to be more difficult, there will be a little more discouragement, but as I've been through it before, I know how to do it. Then I'll have more sense of anticipation, I'll get more results, and so more happiness. And that's how we manage to do things that are very difficult.

In strategies for change, there's something very important called visualisation. And this, in fact, we already have in our mammalian brain, which is the oldest part of the brain and also called the reptilian brain, because in fact dinosaurs already had it. So it's nothing new! So this is visualisation. Imagine a monkey, he's at the bottom of the coconut tree, he sees that at the very top, there's a coconut. And he knows what a coconut is, so he can anticipate the taste of its flesh and coconut milk. And so,

he has this taste in his mouth, and this taste triggers production of serotonin in his brain which gives him the energy to climb to the top of the tree and come back down with the coconut. And it's the same principle: the brain gets its reward, he climbs down, he eats the coconut, the brain gets its reward. So next time, if there's a coconut higher up, he can go and get it, because he's already had the experience of success.

In fact, there's no age limit at all for change, because in the early 90s we learned, contrary to what we'd believed up until then, that the brain produces new neurons called baby neurons throughout life, whereas, for a very long time, until the beginning of the 90s, it was thought that from the end of adolescence, the beginning of adulthood, the human brain no longer produced new neurons, and that as a result, it inexorably aged, and that learning capacities, past the age of 25 or even 30 years old, were very limited.

But we now know that, as the brain produces baby neurons throughout its life, at the rate of around 1,500 per day in adults, it's as if there's fresh air blowing into the brain all the time, so we can continue to learn, and we can produce new behaviours all the time. In fact, you have circuits in the brain, so the brain's ability to change things is called neural plasticity. It's like plasticine that you can change around all the time, and in your brain you have circuits: habits, education, and learning mean you have behaviour patterns. And the behaviour patterns in your brain are just like trails in a forest. The more you follow them, the better marked they get, and the easier it is to follow them. In the brain, there are clear paths, these are called neural circuits. And in certain cases it's always the same thing, it's the whole punishment-reward-punishment-reward system. When the path leads somewhere, when it's interesting to go there, human beings will carry on following them, the brain says "go on, go on, go on, go on." But when the road leads nowhere, as is the case, for example, with children... You know how little kids make a lot of noises with their mouths, and sometimes you wonder if they don't speak some weird language. They make up weird words, but all those words, they're going to give them up, because they don't work for communication. And so the paths that had started to emerge with those slightly weird words, they close down. And with changes, that is, every time you change, you close down paths that are no longer useful. So in the field of ecology, for example, I think that there are lots of behaviours that people have given up, so by definition, those people who used to do those things, their circuits have closed down, because they've become pointless. And then you have to create new circuits, it's like opening up new paths in the forest. So you need tools, vehicles, machinery, and for the human brain, it takes between three to six months of daily training.

After that, once the circuit is established, it stays there for a very, very long time, but at the beginning it's a bit of an effort. It's a learning process. And all learning processes take effort. You can stimulate the production of new neurons, because in fact you get about 1,500 a day. But if you stimulate yourself, you can get even more. And stimulating the production of new neurons is quite simple, but it's the same thing, it takes a lot of training, because it's a learning process. So every day you have to say to yourself "I'm going to do something new." That can be very simple little things. "So, I have coffee every day. From tomorrow, I'm going to have tea, I'll change that." So your brain is saying "this stuff is odd, it's not the taste I'm used to, but it's not bad." So, it quickly produces a new neuron, the morning tea neuron.

In fact, humans are social animals, and therefore constantly under the gaze of others. That's important to anthropologists and palaeontologists, because now there's a sort of a consensus that humanity started with cannibals. For a reason that's also a fairly obvious concrete reason, and that is that there definitely wasn't enough animal protein available on earth for humans to eat outside of their own species. So what did they do? Human beings ate other human beings.

And how did that happen? Obviously it's all extrapolation, because unfortunately we weren't able to film it, we don't have any written documents. We imagine, based on what we know, what it could have been like. And in fact we imagine that there was a kind of sub-humanity which was made up, for example, of prisoners of war, or of the disabled, because I think that at that time societies didn't integrate them at all, or of people who were too weak for the needs of the human group, and they most certainly served as food reserves. So in fact there was a sort of human cattle, which served as food for others, and they were the ones with the lowest social status, if they had any social status at all.

That's why in our brain, somewhere deep in our brain, in what some call our mammalian brain, there's an enormous fear of not having a high status within the group, because it's a potentially mortal danger. This makes up a good part of the strategy of human beings, and we see this very, very clearly, even in small children, at two and a half years old in nursery or pre-school, you constantly need to elevate yourself within your social group.

So you have a social group, just like at the beginning of our history. You were a group in a cave, because if you weren't part of a group, you would die. So being in a group is fundamentally important, but being in a group isn't enough. You also need to have a relatively high status within a group. And now, in the 21st century, how do you acquire high status within a group? By being the person who knows how to do things that others can't do, or who's able to come up with ideas that others can't. Hence there's a direct application of changes in behaviour in terms of sustainability, of protecting the planet, because, as we know, right now that's the most important thing, we have to protect this planet, because if the planet dies, we die with it... So it's very, very, easy to understand. Thus, all so-called ecological or environmental protection behaviours are behaviours that are highly valued socially, and which consequently socially enhance those who practise them. So if you come into your group with a new behaviour, but one that's a behaviour that everyone else will realise is smart and useful, you suddenly move up the ranks in your group, and from the moment you move up a rank in your group, your brain gets its reward, and it carries on.

The problems posed by climate change are a matter of life and death right now, because, as the WHO Director-General himself has said, the only pandemic prevention we can do is to take the problems of climate change seriously. So, as you know, because of climate change, there are parts of the earth's surface which are coming to light which never have before. And we know that in such places, there are those much talked about mega viruses, and we don't know at all what they are or how they will act on humans. So prioritising climate change is key for health issues. Because if we don't solve the problem of climate change, we won't solve any of the other problems, including that of pandemics, and we've just witnessed how much of a serious problem those can be.

Hence the need to take these questions seriously and say to ourselves "we each have our own responsibility in terms of this", and so each of us has to act. And if you do one small thing, if everyone does one small thing, they end up being a big thing. It was the Swiss psychoanalyst Carl Jung who said "if you want to change the world, do it, change it around yourself. Start small and it will grow."

How do you convince people who are most resistant to change? By appealing to people who are very charismatic and who have a lot of influence over others. You need people who are very charismatic and well known for being people who do good deeds.

This is the case, for example, with Jane Fonda, who also fought hard against the war in Vietnam, and for peace in that part of the world. And she did something that I find very admirable and very striking. So she was giving a press conference as usual. And when Jane Fonda gives a press conference, there are a lot of journalists, both American and foreign, and she was wearing a red coat, a very nice red coat. And she told the journalists: "Look at my red coat, and take a good look at it, because I've made a decision, and it's the last piece of clothing I'll ever buy." Coming from her, that was very striking. And of course, she also chose a red coat, so that it could be clearly seen. And when someone like Jane Fonda, who was a fashion icon, who was one of the most beautiful women in the world, who was dressed by the great French couture designers, said "I looked in my wardrobe, and I don't see why I'd want to participate in something that's destroying the planet, and I will never buy a coat again in my life", that's an extremely strong message. And I'm sure that after seeing that, there are people who went to look in their closets, and who said to themselves "yes, why would I go buy myself something on Saturday?" Because I've got all these, I've got this, I've got that, I've got this. I can make do with these." It's that kind of strong message. Image is very very important too. Because what you remember is the picture of her red coat, which I could almost draw because I remember it so clearly.

If I ever have to give advice on how to initiate a change, and most of all once it's been initiated, how to make it long term, I'll tell you about something that I use with my patients, and which produces really good results: it's called the pride board. So every day you're going to write it down... in a journal, or on a board on the wall, that works great too, you write down one thing that you're proud of. It's the same system again: the brain, reward-punishment. The pride board is a bit like the honour roll for students in school. And so, of course, it doesn't have to be a different thing every day, because if you decide to pay attention to electricity, and if every day you've been very careful not to waste electricity, you can write every day "today, I didn't waste electricity." It goes on the pride board.

So for a lasting change, it takes between three to six months, because we have to re-establish the paths in our brains. It's like in the mountains, you need some time for them to get established. But since, thanks to the pride table, you get rewards every day, you get a small reward every day, it actually allows you to keep going for six months, because instead of having a long period of six months ahead of you, in fact, you take it day by day, so it's a lot easier.

## Speaker 2 (outro)

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