**Sir Tim Smit – Seeding Change (December 2020)**

We used to talk about ‘we are stardust’ - do you remember that we are stardust?

Isn't it strange that the world of science and the world of hippie stuff seem to have come together as I've got older and scientists started to look at things that we once thought were ‘alternative’?

We're now looking at a point where all those alive today who are, let's say, under 16 with good chance and luck being on their side are likely to live another 20 years perhaps, are going to face a situation for the first time in the history of humanity, where we realised we really are stardust.

When you look at the internal biome of the human, the bacterial inner workings, and then you look at the work that's coming out, especially in North America (but now Britain is rapidly catching up) and the fungal structures of the soil, the so-called Wood Wide Web, you realise they're one and the same family.

We're living at a time where humans are really going to suddenly be given the opportunity to realise that we are part of nature *not apart from nature*. As opposed to it being middle-aged blokes, predominantly, making speeches with sanctimonious wagging fingers, about how we're all doomed, which has never persuaded anybody that the world could be changed.

I just think we're on the verge of a brand new green enlightenment. Now, my version of that enlightenment is pretty similar, I know, to so many who are watching today. I am a firm believer in natural philosophy, that wonderful concept that got destroyed by science. 1834 was the dread year that the word science got used and after that, intellect started to colonise the world.

Suddenly you had physicists, biologists, zoologists and chemists. Then you had geochemists. And then they broke that down further and we colonised that knowledge to the point where we knew absolutely everything about small things, or we were progressing towards the those small things and everybody forgot that in order for us to have a bigger vision, we needed to put that Humpty Dumpty back together again.

So for me and for Eden education, our hero is ‘all the king's people’, because we're now no longer just men, it's all the king's people and all the king's horses putting Humpty back together again.

And that is what the Eden education programme is actually about. And that is why the environment is absolutely critical.

The best book I think I have ever read, and if you haven't read it, please do is [*Pandemonium* by Humphrey Jennings](https://en.wikipedia.org/wiki/Pandaemonium_%28Jennings_book%29). It was the book that inspired Danny Boyle to do the 2012 opening ceremony. And the book is an astonishing worldview - he was writing a book about the history of the Industrial Revolution. If you're looking at me, you'll see a wonderful picture behind my head here of the steelworks at Coleville, which are next to Blaenavon. In 1867 23% of the GDP of the British Isles came from about eight square miles. That's where steel was invented. But what is brilliant about this book is it tells the story of the Industrial Revolution, as it was lived by those who were going through it. It showed the Age of Enlightenment in terms of correspondence between people who were living.

It came as a huge shock to me to discover that Isaac Newton, for example, was not that impressed with having discovered and written up gravity, he thought that was quite a trivial thing. He was more concerned with trying to find out what caused bioluminescence in the shell of a beetle. He was also very interested in the nature of sound. Was it a matter of friction? Or was it something that was inherent?

Anyway, this book builds up this picture of how our whole thought process developed, how we taxonomically started to order the world so that we could understand it. I take you forward a long time to last year - to the 100th birthday of Jim Lovelock, probably the greatest living scientist. Jim, as you will know, invented or rather gave words to Gaia theory, the idea that the planet was a living system. I was fortunate enough to go to a series of lectures that were put on in his honour. We were having a cup of tea together and I said to him *do you think the major laws of nature have been understood?* Most scientists will say ‘yeah’. He said: *Well, at 100 years old, I am continually bothered by the sense that there's one great law of nature that we are missing. We're just missing it. I don't know what it is. But we're missing it.*

There's this great thing that's coming - it is just out of touch, what challenge that is.

So if you take the learnings of the new enlightenment, what would you look at in the future? What would you do if you discounted the views of most middle-aged men, who are responsible for most of the problems we have? What would you do?

You realise that men traditionally like to write history as if there were no shocks involved, but almost everything worth having was a shock. But what happened? I'll give you a test - go out for a drink with a banker, anywhere in Britain today. You will find that these bankers, who did not see anything happening in 2008, by now will have discovered that they were there, they knew it, they were a happening thing and they started before everybody else.

It's just like people who get invited to garden parties by Buckingham Palace. Most people who go will never see the queen, but within six months, by the time they're home, they will be describing the long conversations they had with Her Majesty. That is the way humans are - the way they write the story of their life.

So I will try and tell you a story that is really different. I believe that the next ten years are going to be utterly shocking - so shocking that it will make you laugh when you hear people like Boris Johnson because you will realise in ten years’ time, he's exactly like those bankers.

I don’t mean that as a political jibe at a political party – it’s to do with the fact that the purpose of today is to talk about the environment. Oil is dying as a business. Electric cars are coming in at a speed which is the same as how the smartphone took off. Most people are talking about, ‘wouldn't it be great if by 2014, maybe even 2030, we get rid of diesel and petrol cars’. Believe me, by 2023, there will be no factories anywhere in the world of large scale making combustion engines. Then you'll have electric cars at a speed you wouldn't believe.

Did you know that General Motors spent something like $200 million last year on social anthropology. Why? Because they know that the world is changing so rapidly that probably within the next few years, 50% of us will not want to own our own cars, we will want to share cars. So we've got electric cars, we've got shared cars, we've got cities that are clogged up and clogging up our lungs.

But what is going to happen if you're a property developer? Buy those houses that are alongside those really noisy fumy streets! If you live in London, go to Hanger Lane and buy houses, be a stinking capitalist and make a lot of money. Because before the next 10 years are out, our cities will start to become villages again, the tarmac will be ripped up. There will not be garages everywhere because there won't be motor accidents and most electric cars have only got 13 parts - so all of those jobs will go. All of them will go – the world will just be different.

But because of our desire for meaning, and belonging, look what happened in Madrid when they took out the motorway that was in the middle of Madrid. It cost billions and everybody protested. It was a bit like the Angel of the North. People wanted to go to the cross to stop it. Now there would be a revolution if you tried to get rid of it. In the middle of Madrid, everybody walks now - people can't believe how livable This place is. It's starting to happen in Milan. It will happen in London soon.

So the motor vehicle - that's going to change everything. Just imagine half of the tarmac on our streets of Britain being ripped up, farmland being given back. Is it farmland? Let's talk about farms. If you read a report called [*The Future of Farming* by Rethink X](https://www.rethinkx.com/food-and-agriculture), they paint a picture that within six years from today, Big Agriculture will be on its knees. Evidence? Look at the fastest growing stocks in West Coast America – it’s the clean meat industry. The three fastest-growing, with $1.7 billion turnover last year, is clean meat, which is the slang word for artificial meat. They're now at a point where the artificial meat industry is very close to reproducing all of the classic meat cuts that you expect. Why are they doing that? Why is it going to be so big? Which country is now starting to work on it big time?

The Eden Project has two projects in China - Qingdao and Tianjin. The president of China has a saying which he says to each botanic institution - *heal the soil, heal the soul*. Every major state-owned enterprise in China has to have a sustainability teacher. The country is going through an incredible morphing. Are you aware that in 2015/16, 2016/17, 2017/18, 2018/19 – in each of those years, China planted and propagated more trees than in the rest of the world put together?

Yes, it is still a dirty country but that's by virtue of its enormous size. They also produce more solar than any country in the world, they produce more wind than any country in the world. They are aghast at how our little nation, which once led the world in that sort of thing, actually allowed ourselves to have a political class that did not see the future and actually gave as its excuses for not investing in it, that China and India were so polluting that it wasn't worth it.

Anyway, we've now caught up - the cellulose technology is going amazingly fast. If I was to tell you that the fermentation bins that you use in making cider or distilling, are now being used by collecting proteins from the air. This isn't science fiction. This isn't Soylent Green. They are producing milk protein for a third of the cost of dairy. What do you think the impact of that is going to be on Big Dairy? Artificial dairy is going to be enormous. Within 10 years, the big beef herds of the USA and of the rest of Europe will go = Big Agriculture will die. Clean meat will take over. It doesn't mean that we won't eat meat as treats and all the rest of it. I'm not actually coming at you from that perspective. But it means that in this post-Brexit settlement, whatever your views before it, we are faced with an opportunity of *unbelievable* magnitude.

We're going to be looking at the land. I'm looking out at fields right now. And they look really good. They're the sort of things that we call countryside. Isn't it funny, we call it the countryside? Those green fields with a little few twiggy things on the side and the field boundaries? That's not countryside - those are all human-made. All those fields are human-made. Real countryside would have a lot of trees, would have a lot of silviculture, a lot of hedgerows. What you're going to get over the next five years in the UK, is a massive rebalancing in terms of the way we look at agriculture, so that we start to look at the soil in terms of soil enrichment and water porosity (meaning the degree to which water will be absorbed by that soil). We will be looking at biomass generation - by which I mean the sheer quantity of green stuff that's photosynthesizing and growing. We will be looking through that soil enrichment at a huge biodiversity gain.

The hedgerows will fatten and we will be paying off farmers properly to become stewards of the countryside. Why would we do that? All right, a statistic to tell every youngster: did you know that in Roman days, the carbon in the soil was roughly double what it is today. It means that if you look at the world's agricultural land and you imagine that people who suddenly realise that they are part of nature, rather than apart from it, transforming their farmland to be both very, very productive, but also ridding ourselves of the fossil fuel injections, which have actually so damaged that soil, both for its porosity, but also for its viability so it blows off everywhere, leave aside the chemicals and nutrients and phosphates that have run into our rivers and have done such enormous damage.

We're looking at a potential moment of green salvation. This whole thing about the meat industry dying and the impact of agriculture on carbon is astonishing because when you break it down, the input into CO2 is 71% fossil fuel. What happens is because we break it up and say it's x amount for agriculture, X amount for aircraft, you forget that the fact that it was all energy. So if we can actually have an energy revolution alongside our agricultural revolution, we could if we then allied that, to water technology, cleaning our water, we could actually, within the next 20 years, cure our carbon situation.

Now, I'm saying this is a radical postulation. I'm saying it deliberately. I am fortunate in my job - I meet wonderful people. I met this incredible guy up in Edinburgh, who recycles 37% of all of the glass in Scotland. He's produced the best filtering system in the world because, although he's now wealthy, he has this moral desire to get this filtering system all over the world so everybody can have access to clean water. He says to me, the water that is in our rivers and in our mains water supply - if you filled a German swimming pool with it, it would be closed down immediately. Why? Because we've allowed our water companies to get away effectively with a sort of soft murder. They used sand filtration systems, that were actually prescribing in the very early 1900s, which are now way out of date. If we had good filtering systems on our water, we wouldn't be putting the 80,000 chemicals that flow into our rivers into the ocean. If those chemicals didn't go into the ocean, and didn't start to bond with microplastics, we wouldn't be killing coral reefs and we wouldn't be killing phyto- and zooplankton. Just imagine, if you look at the mathematics of the regrowth of phytoplankton and zooplankton, if they're un-interfered with, they almost grow exponentially. And what do they do? They absorb carbon.

This is actually unbelievably simple. If we hadn't - and I go back to this - if we hadn't let middle-aged men dominate our thinking culture in our establishments, we would have said ‘what on earth are we doing‘ as a nation of citizens allowing people to pour filth into our rivers, and put it into our sky and damaging our soil? We're mad, but we're all waking up. That's the good news. We're waking up. If we stop seeing it as a dystopian world, but a wonderful opportunity, we then start to think of our youngsters. Crikey, our youngsters! I go to lots of schools and you don't need to be worried about the future. There are a lot of really, really smart people there, amazingly smart people in these schools.

If we can find a mechanism of holding hands, all of us who are interested in this subject, and lording teachers, and admitting that none of us knows all of this stuff, and getting rid of all our insecurities about what we don't know, and how we get found out. We're all imposters. Is there anybody on this call who doesn't feel like an imposter? I do! Every day I wake up and I say, Christ, there must have mistaken me for somebody else. But you know what? It's one of my favourite questions of people who run enormous companies. They all feel like imposters because actually, we're all normal people. This pandemic has been great because most of us normal people have had to get a lot of communication on the web and not getting into aircraft and all that stuff. That's important. But you know, I think the most important thing has been that I don't think since I was five years old, maybe six, have I actually had the pleasure of day by day, watching the seasons unfold.

You know, from March, early spring, and then going into the summer and then now autumn going into winter. Having this slowing down, actually being aware of the rhythm of nature suddenly makes you realise – crikey, why do I feel good seeing this? Why do I feel really good feeling that the seasons just go through and they each have this wonderful bouquet each their own? It's very interesting - those of you who haven’t read Dara McAnulty’s marvellous book, *The Diary of a Young Naturalist*, I would recommend it. I watched him at Hay Literary Festival, having a chat and I bought the book. When I told my friend Professor Mike Depledge, whose specialism all his life has been the environment, what Dara had written on his first page, he said crikey, what an insight.

What Dara Said, and I paraphrase. He said I am very autistic. When you are autistic, you find the behaviour of human beings completely puzzling. Because what they say and what they mean seem to be so different. What they argue about is very often not the thing that they're actually angry about. It's a complete puzzle. I went and discovered nature and fell in love with nature because when you go into nature, it makes sense - the cycles, the rhythms of the natural world. They reset me because they're constant, they're solid. So that, quite obviously, is what inspires us at the Eden Project in Morecambe, which has been an incredible thing.

We haven't built it yet, we're in the design stage of it. But it's so humbling to go to this marvellous, once famous seaside town. Bradford on sea. It was built for wool workers from Bradford and they drove over a railway line right the way across. It's had better days, but when you stand on the front at Morecambe and you look out across the incredible bay, it is such a gift of nature. If you've never been there, you must go. The speed at which the tide comes in and can outpace a man, in fact it can outpace a horse, but watching it and while you're looking across it at the Lake District, and you're watching the fells and then the mountains appear, you can actually see weather systems developing. The wind is blowing in your face and you look out with tears going down your face because it's that windy on the day that I'm describing, and you just feel - this is like a canvas on which to explain to people the majesty of the natural world.

Why is it that The Lion King, the ‘circle of life’ feels such a natural thing, doesn't it? Okay, it's Disney and it's clichéd and all the rest of it. But actually clichés, I noticed when I was in the music industry, clichés are often used as a kind of one-upmanship. Oh, that's a cliché. You know, I'm a bit better than you. I'm into that band that no one can pronounce and plays music really funnily. But actually, the Moonlight Sonata, it's a cliché? Oh, is it? Actually, it's a bloody lovely piece of music, and it will always be a lovely piece of music. I think those of us who like the occasional cliché should stand up for clichés!

When you see the natural world in its majesty like that, you can't but feel both well and profoundly humble. Then you ask all sorts of difficult question. Last May, not the one we just had but the May before, I did something unbelievably brave, in a very cowardly way. My son got invited to climb the biggest tree in the world in the Sierra Nevada Mountains. I hate heights and my son said, ‘Dad, it's a once in a lifetime opportunity’. And I rather feared that he was right, but that didn't make it better. Anyway, I found myself by this tree, and we climbed this tree right to the top, about 320 feet up. At the top of it, you can look one way right across Sequoia National Park and it is just total green, with a little bit of bronze in it from the dying pine trees. Then look left and in the distance you see Death Valley. You know what hits you when you're in the top of this tree, grateful that you're clinging to it as the ultimate tree hugger? It is this weird sense that you're on top of a tree that's 4000 years old and that tree has outlived, to my knowledge, probably many more, but to my knowledge, from what I know, 37 different human civilizations that had a beginning, a middle and an end. That makes you think, doesn't it? Each one of those civilizations would have been full of people like us, who becomes an establishment, and then screw it up. Shouldn't that tell us something about what would happen then if we put our faith in teachers as opposed to middle-aged men? What would happen? I'm not saying there aren't some very good middle-aged men teachers. That's not you know what I'm saying. It's just that we've got it wrong so often and we're faced with this extraordinary opportunity to reimagine ourselves as part of the natural world. Once people get used to it, they realise that it has a meaning to them.

I go all over the place, just like you do. And I was recently in Eastbourne, a town I like very much because it's got this rap of being a place where old people go on holiday. When you actually go there, it's not like that at all. It's got this horseshoe design with the most beautiful marshes in the middle of it and all their schools have got into natural history. As you may know, I'm a huge fan of the natural history GCSE, which Mary Colwell has been championing with OCR. The enthusiasm down there is absolutely astonishing and you suddenly think we could just do this amazing teaching art piece, create a Copacabana of natural history, from one side of Eastbourne to the other up to the south downs.

People say, Tim, you're a dreamer. Yes, I am a dreamer. You know, the thing that really pisses me off the most is all those people who think they're cleverer, who think you can't have dreams, dreams aren't for the like of you. I always say kill negative people, which always goes down really badly with people who are into HR, but actually, I won't have them anywhere near me, because they're like alien spawn. The problem is the dreams all of us who are watching this programme should be having, should be giving, should be putting air under the wings of – we are talked out to them by people whose dreams were not that great.

I was reading the introduction to Neil Gaiman's new book this morning over breakfast. The guy who's writing the introduction was saying part of the problem is the Protestant ethic. Protestants have actually persuaded themselves that the imagination is something for children - afterwards, you’ve got to get grown-up. No, it isn't. The imagination is for all of us. I did this TV show, where I was asked by ITV down here, three years after the Brexit vote, what I felt now and I was in a grumpy old man mood. So I said, you know what, you're really boring me. I can't tell me how boring you are. And this was live so they couldn't cut me off. I said, you know, I have been dying for one of you to ask the only intelligent question worth asking me - you know I was a Remainer. The question you should have asked me is not how cross am I or what's wrong. You should have said something generous and brilliant, which is, what would it have taken to get you to vote Leave? If you'd stood up and said, we're going to make our country food independent, we're going to become energy independent. We're going to cut budgets everywhere. We need to hold on to a dream. That's why the Edge Foundation is so important, because they've given wind to dreams. But we ought to say it is not an impossible dream to give every young person in this country, an experience, not of being in the natural world, as if it was out there, but of being in *their* natural world, as in every young person has the right to go to places, has the right to grow things, and actually will grow things and learn to cook these damn things. In my view, if everybody studied Natural History all over the world, the world would not be in the mess it is in today. If everybody understood the natural world, and learned to cook and grow things, you've then got the basis for an independent person. I would argue that if you know maths, history and geography, and you can quote Shakespeare, and think you're educated, I think you are sorely ill-educated. We've got to actually let our young people become independent and realise that all that generosity that comes from the land around us.

If you want another tip for a book, read *The Knowledge* by Lewis Dartnell. It's such a clever premise. Imagine it's apocalypse yesterday. The premise isn't how are you going to survive, it’s how are you going to thrive? How are you going to protect your civilization, and it is stunning. I must admit, I read it and hairs stood up on the back of my neck, because it said, after camping out near a city for a while, and pillaging tins and all the rest of it, you then realise you need to know about the soil, you need to know about the land, you need to know how to grow things. You need to know which things grow and which will keep you alive. You need to know how to create a little bit of energy, how to keep things cool, and so on.

This builds up a world of knowledge to create the civilization we're in. Now that I have ranted, I have ranted and I've ranted but I've ranted for a reason because I think, we need to work out a way as an entire profession of mentor teachers, people who support teachers - how can we create that, that social cachet and dignity? If the most valuable thing you have in your life is a child, surely the person you're giving your child to in order to educate must be the most important profession in the world mustn’t it? Come on? It must be.

So I leave you with the thought that we must keep as many middle-aged men, except those who get an honorary licence to not have to call themselves that, away from this stuff. That we really dare to dream very big about a fifteen-year blitz on education and the environment. And also to realise that the jobs of the future are being made around us. I've described a changing world and it's utterly radical. We need people for whom growing things does not feel as if you're the third thickest child of the third thickest child. We should all be able to grow things. The Horticultural College should be beaten over the head for allowing themselves to betray this great thing. Horticulture is a science, an applied science every bit as important as engineering, medicine and pharmacy. We've got to get people growing again and realising that our future is going to depend on every man, woman and child being able to see growing for what it is. It’s nurturing, stewarding a planet of which there is only one to the best of my knowledge, and by so doing, it will also make us well. Thank you for listening to me. I hope my rant has made some sort of sense. You can see I'm passionate about this. Any revolution you guys want to start, count me in. Thank you.