Transcript of ‘Global Tipping Points 2026: Positive Tipping Points’

Season 3, Episode 47, Transforming Tomorrow

[Theme music]

Paul: Hello and welcome to Transforming Tomorrow Tipping Points from the Pentland Centre for Sustainability in Business, in association with the Sunway Centre for Planetary Health.

We're at the Global Tipping Points Conference 2026 at Sunway University in Malaysia. I'm Paul Turner.

Jan: And I'm Professor Jan Bebbington.

[Theme music]

Paul: Jan, a tipping point has nothing to do with how far I can push you before you fall over.

Jan: [laughs] Although, that metaphor does work. It says how far you can push a system until it falls over, or tips into a new state.

Paul: And technically it is a tipping point, it's just your personal tipping point…

Jan: [laughs] …yes…

Paul: …it's nothing to do with global tipping points, and the whole point of this conference and the potential tipping points for the planet.

But I think, we've had a few episodes out, and we haven't necessarily discussed exactly what tipping points are, and *especially* what positive tipping points are.

Because, pushing you over, bad for you. Positive for me, [Jan laughs] 'cause I'd find it funny.

Jan: I don't think that that's what they mean by, by positive tipping points. [laughs]

Paul: I'm just demonstrating that, that there can be positives and negatives to you getting pushed over.

Jan: Indeed. And um, what I liked about positive tipping points, and sort of the phrase that I really picked up and enjoyed, is self-propelling innovation. So I don't think pushing me over is self-propelling innovation, that's all I'll say.

Paul: No, it would be me propelling, um, falling down. I don't know what, what, collapsing? Collapsation? I don't think there's a word that I can think of that ends in 'tion' that's going to fit at the end of that sentence.

Jan: I don't think any of us is gonna fit.

Paul: No, but there's lots of interesting stuff to be discussed around positive tipping points, social aspects of it, how they come about, what can be done to help them, what obstacles there are.

Uh, in order to do that, we're gonna be joined today, we've been speaking to Dr Steve Smith, who is a research fellow at the Global Systems Institute and Green Future Solutions at the University of Exeter.

Well, let's take us to the conversation.

[Pause]

Paul: Steve, thank you very much for joining us.

Steve: Great to be with you, Paul and Jan.

Paul: So your work, Steve, really looks at positive tipping points. That's a particular area of it.

What can you tell us about positive tipping points? What they are, what they mean, how they might be achieved?

Steve: Well, I dunno whether you've had anybody yet on your podcast who is an expert in, in the tipping points, uh, area of research. But, uh, usually most people associate tipping points with the negative, sort of scary stuff that's happening, and potential for happening, in the earth system. So things like the, uh, the melting of the ice sheets and the, uh, melting of the permafrost and the dieback of the Amazon and so on.

And so that's how most people associate tipping points, with these things that, um, can go very badly wrong, uh, in the earth system, and which would be hugely consequential for, for the whole of human civilisation if they did tip.

Paul: Mm-hmm.

Steve: Um, we've already passed the, the first tipping point with coral reefs, unfortunately.

But, um, I am in the good position of being able to study the, the positive tipping points, which is the opposite, which is things that, instead of being things that we're trying to prevent, they're things that we desperately need to promote to avoid the negative ones.

Paul: Is this because you like being a happy person, and you don't want to get depressed by looking at the negative tipping points all the time?

Steve: Actually, I do look at the negative, the, uh, the other system, uh, tipping points, but, uh, that's not my background. And so I, I do, uh, I do talk about both, but, uh, I'm, I'm very happy to be looking at the solutions.

Jan: So what's your background then? What has, what has led you to be able to look at that side of the equation?

Steve: I'm a social scientist. So the people who look at the earth system tipping points are, obviously, uh, natural scientists, climate scientists.

Um, my background is in the social sciences, so I did my PhD research on advocacy coalitions for, uh, rapid transitions to net zero in the UK. So I was looking at how you get these, um, coalitions of actors together to accelerate the, uh, policy action in the UK, on the UK's side. So I wasn't looking globally, I was just looking at the UK situation and, uh, uh, the, all the social science around, uh, social movements and the policy process and, and politics, and governance and, uh, the role of public behaviour and so on.

Jan: Well, that'd be brilliant fun. And, I mean, the UK at various times in the past has been a very lively place. Like when the passage of the Climate Change Act, um, in England and Wales, and then again in Scotland, and, and there's been, you know, there's a lot of action, I think, in that space, which would lead us to be quite cheerful.

Steve: Yeah. Except when you're doing a PhD, you just can't keep up. [Jan laughs] It changes so fast.

Jan: Well, even doing a PhD is not necessarily a recipe for cheerfulness either…

Steve: …that's right…

Paul: …yeah, you, you see PhD researchers all the time looking really happy and full of life and not at all tired.

That's, um, I guess you've explained there as well, you talk about social sciences, how it comes to look at social tipping points too. So, what is a social tipping point as opposed to a natural tipping point?

Steve: Yeah, so any sufficiently complex system, either in the natural world or in the human, social world can, uh, potentially have a, a tipping point. And basically it's, it's a complex system and there are two alternative stable states.

So, uh, in, you know, social systems, you might have, uh, a, uh, sort of a, a nice healthy functioning society, but there is, for various reasons, maybe some social, uh, upheavals or, or difficulties and tensions. And then there's a possibility that you could have, you know, a, a revolution or something. And then you could say that there are, um, things that help that society to tip into a failed state…

Paul: …mm-hmm…

Steve: …that's one example. So there's loads of, um, other examples in, in the social world.

Uh, so we study things like, um, social movements, for example. Uh, you look at Greta Thunberg, the Swedish young lady who, uh, who decided one August in 2018 to skip school as a protest…

Paul: …mm-hmm…

Steve: …and she was on her own for a couple of weeks, and then somebody joined her, and then another person joined her. And there was a tipping process whereby, uh, the whole thing went exponential. And, uh, eventually, six months later, there was millions of young people around the world not going to school on a Friday.

So there are social tipping points in, uh, in our behaviour as well as, uh, technological ones in, in, you know, the, the revolution that we're having in solar panel technology, for example.

Paul: Something that was talked about this morning, here at the Global Tipping Points conference, was the idea of a 'black swan'.

The way you've just described what happened with Greta Thunberg there, almost seems like what happened with her movement was a black swan. It was unexpected and it had major consequences. Um, and maybe that's an, an

example of a positive black swan. Something that, that can happen like that, that maybe we need in terms of tipping points and action for climate.

Steve: Yeah, they, they have swans of all different colours apparently, and, uh, they, they did finish that session, uh, talking about green swans. So…

Paul: [laughing] …they did…

Steve: …I should, I should call her a green swan probably.

Jan: Yeah. It feels much better than being a black swan.

Steve: Yeah.

Paul: I dunno. It seems like someone's poured paint over you, if you're a green swan. [Jan and Paul laugh] Feels entirely against the idea of nature conservation if you've been covered in green paint.

Jan: Indeed. So I know that you research at these sustainable transitions, are there different types of sustainability transitions? And you also look at accelerating them, and so how and when can they be accelerated? I know that's at least four questions in one, for which I apologise profusely.

Steve: That's all right. Yes. So the, um, yeah, basically what we study is the science of sustainability transitions and, and how to accelerate them.

So we're looking at systems which are currently undesirable, because they're based on fossil fuels, and we're trying to tip them into a different, uh, state. But there there's different ways of phrasing it. So in general, we can all agree whichever our tradition is on, on the, the fact that we are trying to accelerate the transition to a sustainable future. Yes.

Paul: So you were one of the lead offers of the Global Tipping Point reports, in the last couple of versions of that. Have you seen in compiling those reports, signs for optimism or signs for pessimism, or both?

Steve: Um, both, I suppose. I mean, uh, there are some incredibly urgent and serious, um, things going on in the, in the risk of earth system tipping points, which would be devastating. And the, and the, obviously the, the main ones are, uh, the ones that are beyond their tipping points, which is coral, the warm water coral reefs.

But we're also really concerned about the Atlantic, uh, overturning circulation, which is, uh, the sort of the central heating system for, for northwest, for northwest Europe.

So, um, that's a sign for, I'm not sure it's a sign for pessimism, but it's certainly a, a reason for big concerns.

Paul: What would happen if the Atlantic did tip.

Steve: Um, well, there's different, it gets complicated because there's different parts of the AMOC. If the, if the whole thing tipped, then we could be looking at, uh, a very extreme, a very different place. So, uh, you're looking at, uh, ice sheets coming down halfway down the North Sea, you're looking at below 20 degree, um, winter nights for months in, in Scotland and, and, uh, sub-zero temperatures also for a lot of the winter months in, um, in, even in London.

But at the same time, even you, even though you have this extreme cold in the winter, you'd also have extreme heat in the summer as well. So it would be a very different place to be living in, in which, um, you know, I wouldn't want to be an arable farmer, for example.

So, and of course fisheries, and just the whole infrastructure that we have in the, uh, in the UK would be very different.

Paul: Never mind being arable farmer, and with no, uh, offence meant to my partner's family, I wouldn't want to live in Scotland if that was to happen.

Jan: [laughs] It would be tough times. And in that context, I guess that's put, put some of the concern in the UK at the moment in around food security, which has been identified as a natural national security threat as well. That kind of makes a lot of sense with that.

How quickly could that happen? I mean, is it over, you know, hundreds of years or could it tip and change quite quickly?

Steve: Again, I qualify my answer by the fact that I'm not an earth scientist, but I do know from having, uh, been a part of this, this study for, for many years, um, it has, at least the important parts of the AMOC are capable of tipping in a matter of a few decades.

So we've seen in history, um, in the sort of 14th, 15th century, we had this period called the Little Ice Age. Um, and so that was because of the, um, the Subpolar Gyre, which is a part of the, the AMOC around, uh, just below

Greenland. Um, so that could, that could happen relatively quickly, in just a couple of decades.

And then you get into, um, not as bad as a full AMOC collapse, but it would look a very different, uh, sort of environment. Yeah.

Paul: What about the positives, though? I know you work with the people behind the Earthshot Prize, for instance, which rewards endeavours that are really for the betterment of the planet.

Do you see, through that and through other work, really positive endeavours that are going on, practical work that's going on to try and address these that might have positive results, even if it hasn't necessarily yet?

Steve: Well, yeah. The Earthshot Prize is, uh, the world's most sort of prestigious, uh, environmental award, and we've been working with them this year to, to help in their evaluations of the nominations that they get every year.

So, as you know, they've, they get thousands of nominations. They have to somehow narrow it down to five winners. And so part of their, um, part of the thing that we've been helping with, with is to understand which of these potential solutions are capable of undergoing self-propelling, sort of, acceleration.

So that, um, you're not just, you know, funding a, an innovation that we want, but after a point it becomes sort of self-sustaining and self-propelling, and that's the sort of change that you want to see. So, um, uh, we've identified 51 areas that they could look at, um, in the five Earthshots to, to try to, uh, to accelerate change.

Paul: And just with a follow up, with regards to Earthshot, it was mentioned yesterday that when you're doing this analysis, how maybe when you first came in, there was a lot of attention paid to climate mitigation and work on that, and maybe not so much to areas such as nature and biodiversity.

Do you feel that represents, maybe, a greater issue within the whole sphere of tipping points? That it can be so easy to concentrate on one area, and not pay enough attention to another?

Steve: Yeah, absolutely. It's a great question. And it's, I mean, I, I've, I've felt it, and I, you know, I, I think that most people, um, I hesitate to say, but I, I'm pretty sure most people focus on things like, what's the technological fix?

That's the, the first place they go to. And other things like, how can we change, uh, societal behaviour, that's less thought about, but it's equally important.

So, um, we do tend to be quite technocentric in our ideas of what the solutions might be, which is why I really like the Earthshot Prize because, um, as I said yesterday, they, they gave us a free reign and said, just use your imagination…

Paul: …mm-hmm…

Steve: …and look at solutions in any area, any walk of life. You can look at, you know, cities, you can look at laws and policies, um, you can look at, uh, you know, social movements, anything you like.

Um, so it, it was, it was a nice mix of, um, of solutions that we came up with through our research.

Paul: Mm-hmm.

Jan: And, sort of, keeping in with that social movement aspect. Could business coalitions who are working together to achieve better outcomes, both individually and for a sector, would you see them as being social movements that would fit within this framing of positive tipping points?

Steve: I, I wouldn't call businesses social movements, but certainly, uh, businesses are hugely important. And coalitions of businesses are hugely important.

I think it's, um, part of our research is understanding that sometimes you don't need everybody to agree or act together. And this, this is true not just of businesses, but of, uh, you know, negotiators in climate policy or, or anything.

You just need enough people to ag to agree on a course of action that then catalyses other people and creates a tipping point, um, for, for, for change. So, uh, and that can happen in, in various spheres. Businesses are, are really important in, in that, in that way.

Jan: And when you say 'enough', um, is there like a percentage of consumers, or a percentage of people in the community that once they, they decide they're going to do something different, it actually accelerates it onwards?

I mean, it won't be obviously, the same in every place, but is it like 5%? Is it 95%? It's somewhere in the middle, I guess?

Steve: Yeah, yeah. I mean, it's a very active area of research. And it depends on the kind of thing that you're trying to change. Um, and in terms of businesses, for example, if you've got an industry which is dominated by a few major industries. Like, for example, uh, 70% of all tropical deforestation is caused by six commodities. And those six commodities tend to be, uh, run by a, a few major wholesalers, and then they and a few major banks fund them. And then a few insurers insure it. And again, a few major sort of, uh, regions import it and, and regulate it.

So if you can just look at small groups of, um, you know, in the EU, China, so the major markets, um, you can, you can create change by having, um, a relatively small amount of actors agree on a, on a standard course of action.

In the case of individuals or, or the public, um, there's again, some great research saying it could be, a woman called Erica Chenowith did a study about, um, the how, uh, if you get more than three and a half percent of the population coming out to, um, protest against a, um, injustice, then revolution is almost inevitable.

Jan: Well, three and a half's pretty encouraging.

Steve: Three and well actually, well, I mean, what's three and a half percent of the UK population? It's still like, uh, a couple of million people, isn't it, or something like that…?

Paul: …mmm…

Jan: …yeah…

Steve: …I can't do the maths straight away, but…

Paul: …no, you'd be, you'd be pretty much right. Just over 2 million, I think, if that's 65 million people.

Jan: Yeah.

Steve: Uh, so it, it, three and a half percent doesn't sound like a lot, but if you're getting two and a half million people to stay out on the streets for weeks on end isn't quite as easy.

Um, but then that's the sort of the lower end. But then there are other research that says, well, it needs to be roughly kind of 20 to 25%. So there's, there's actually quite a broad range. But yeah, there is a range, um, at which there is a, a takeoff point.

Jan: And that's very encouraging. And that reminds me of some of our other podcast guests that look at Keystone Actors, which would be…

Paul: …do you mean you? [Jan laughs] That, that's your work. You do Keystone actors…

Jan: [laughing] …it's other people as well. It's not just me, dear listeners.

Um, so, you know, looking at then, you know, those say, you know, the timber industry or seafood industry, actually, how many of the larger firms control how much percentage of the turnover or the mobilisation of, of, um, you know, marine protein for example.

And that again, gives you some sort of leverage, agency, coalition that you might be able to move things forward for.

So it's the same, same idea, isn't it?

Paul: We're not a visual podcast, but you'll be impressed. Two words I wrote down. Keystone Actors. [Jan laughs] See! I've occasionally listened to you.

Jan: No, I've, I've conned you into that one, I think…

Paul: …you've conned me. [laughing] The whole keystone actors thing is a sham. You've finally revealed it. I'll tell your funders.

Jan: [laughs] Yes, indeed.

Paul: So, a couple of things that were talked about when you were on the stage yesterday were barriers and bottlenecks when it comes to change and making progress towards positive tipping points.

Could you give us some examples, and the kind of issues that might be there stopping the progress?

Steve: Yeah, so, uh, as you say, we, we talk about drivers and barriers, which in technical terms, we, we, it's actually talking about self-reinforcing feedbacks, or positive feedbacks, and, and negative or dampening feedbacks. And you're talking about the bottlenecks or the barriers, which are the negative, sort of, dampening feedbacks that stop the change that we want.

So we are thinking, uh, things like, um, sort of infrastructural lock-ins. If you've, it takes, it takes a long time to change the, the electricity infrastructure, for example. And the planning system can, can sort of bog down if you're trying to build, um, wind fire, uh, sorry, uh, onshore wind power for example.

And, um, and then you've got other kinds of, um, barriers like, um, for example, misinformation that goes on, and the sort of political, um, uh, bad faith actors who, who spread, you know, just rubbish half the time to, to try to…

Paul: …mm-hmm…

Steve: …stop the change that we need.

So there's, there's all sorts of barriers like that from, from the psychological barriers, 'cause we're all, uh, we're all resistant to change to some point. We're quite habitual creatures, uh, all the way through to the kind of structural and in institutional and, uh, and cultural barriers.

I mean, certain things are easy. Like, uh, it doesn't really matter whether the electricity that comes out of my plug is from a, a renewable source or a fossil fuel powered source, it's the same electricity. It doesn't, it's no skin off my nose, really. Um, especially if it's cheaper, which it is now, renewable energy. Um, so that's easy thing to, um, to, to overcome.

But, um, it's, it's harder to overcome other things like, um, for example, installing a heat pump in your home. It can be, well, it can be quite expensive and, uh, sometimes a bit inconvenient.

And, um, same with food, you know, changing your diet. Uh, we, we, like our, we, we're quite habitual with things that we eat, and there may be cultural and religious reasons why we eat the things that we eat. So, um, different things are, um, have different barriers I suppose.

Paul: Now I don't want to be accused by someone else sat not far away from me at the moment of always concentrating on the negatives.

Can you give some examples of the positive drivers then that you, that there are out there for these exact same things?

Steve: Yeah. So, um, let's look at, uh, technology. Now, we all want, uh, clean technology in, in solar and wind power, and so on. So there we, we're talking about to solar power is the cheapest form of electricity in history now, um, and in almost every country.

So we're talking about things, solar, solar cells and, and also batteries now, which are very, very mass producible. They're modular, they're simple, they are, um, you know, they are subject to these self-reinforcing feedbacks, which

are, which we call economies of scale. So the more that you make, the cheaper they get, the cheaper they get, the more people wanna buy them, the more people wanna buy them, the more that are made.

So there's that self-reinforcing feedback. You get that economy of scale. And you also get the learning curves, the, the learning by doing so, the more you make of the, the better you get at making them, and the better they get. So, you know, eventually after decades we've got electric vehicles, which can go a very long way, you know…?

Paul: …mm-hmm…

Steve: …we used to have this range anxiety. Not anymore because electric vehicles can go. And that's because there's a learning curve going on, uh, with battery technology.

Paul: It suddenly called to mind, from the first day of the conference, the picture of A-ha in, uh, [Jan laughs] an electric Fiat from the eighties…

Steve: …indeed…

Paul: …I don't know how far Morton Harket was getting in that, but I dare say it's not…

Steve: …I can tell you it was about 48 miles, uh…

Jan: …ooh…

Paul: …oh, 48 miles. There's an unexpected answer to a question, that , I'm pretty sure you weren't expecting. So. [laughs]

Steve: In these converted Fiat Panda.

Paul: Yes.

Jan: That's cool. Um, I want to now think about fossil fuel companies and how we might understand them and how we might think about them in our, our, in our economy.

So the, the finger I think, you know, quite justifiably, is pointed at that sector as being the source of the emissions. The ultimate sort of producer of materials that turn into the source of emissions. But at the same time, perhaps 'cause we don't have a choice, or perhaps we have a preference, we are also consumers of fossil fuels in one form or another. Either indirectly through electricity or directly through, um, uh, you know, vehicles, et cetera.

How do you think about the divvying of responsibility to the, from between those that produce the fossil fuels and those that use them in their final form, and how, how do we, how can we imagine the, the different responsibilities of those two groups?

Steve: Yeah, it's, it's, again, it's a, it's a great question and it's something that, um, as academics, we, we study and, and we debate it as well, in, in society. What's the responsibility between consumers and producers and, you know, the individual as opposed to the, the sort of the, the structural.

Um, and the only, the only answer really is it's both, we have to be responsible, um, consumers. Uh, we do have responsibility for our actions and, um, we have to look at the, you know, the sum total of our, you know, our, our diets and our travel habits and um, uh, consumption habits. So, uh, I don't think that you can pick one or the other. Um, it is both. Um, so yeah. That's all I can say about that. It's both.

Jan: Yeah. And, but that's, and that's kind of empowering in a way because it, it's not a excuse for an individual, you know, say, like myself to sit back and go, oh, I'll get someone else to sort it out. So, which is kind of defeatist in a way as well.

Paul: Yeah. It's not like getting the plumbing fixed…

Jan: [laughs] No, no. But also, it also doesn't let the producers off the hook either. And so I think that dance with joint and shared responsibility is always the most difficult dance in any kind of, of transformation.

Paul: Mm-hmm. Well, Steve Smith, thank you very much.

Steve: Thank you, both.

[Theme music]

Paul: It's really good to understand how positive tipping points work, Jan, because, you hear positive tipping points, and it's not always clear what needs to happen, who needs to do what, how many people need to be involved. But quite a lot of the stuff that Steve said there gives you a *really* clear picture of the kind of thing that needs to happen.

Jan: And I really liked his, his emphasis that it's not just on technical change. And so whilst, you know, decarbonisation of, of, uh, vehicles, decarbonisation

of the energy system is a technical job, and it's really important that it is, there's that social movement part of it as well.

So for us as individuals or communities or families or wider groups, we can actually be part of something that leads to positive change.

Paul: Yeah, it can be social, it can be cultural, it can be political. There's the scientific side of it. There's so many aspects that come into play. And ,as Steve was happy to admit, yes, businesses have their role to play, especially groups of businesses, and how they become involved and what they can do.

There, there's so much that can be done, both addressing the negative tipping points and then different positive tipping points to make sure they happen. Such as, let's say we talked about this in the very first episode, what happened in Norway with the electric car movement and that, that taking off substantially after it passed a certain point.

Jan: And I was really pleased that we got to talk about business as well. Because, in some ways, business is relatively absent from this conference, and it might be just the mix of people here. So where it is, sort of, where the conversation does go is, kind of, goes to finance and where the money's gonna come from…

Paul: …mm-hmm…

Jan: …and the conditions of finance. But it doesn't, hasn't to date really focused in on organisations and what they can do. Either, um, on their own or with their supply chains, but also as actors in the same sector with the same interests about transformation as well.

So that, sort of, sustainability transitions and business strikes me as a really important area to, um, be able to look at as well.

Paul: Well, yeah, another wonderful insight into the whole world of the Global Tipping Points conference. Steve, one of the co-organisers, and someone who's written those Global Tipping Points reports.

We've still got a couple of conversations to go. We'll get a nice overview of the conference, other issues as well. Really looking forward to those discussions.

Episodes are coming at you like no one's business this week, and they will continue to do so. Thank you very much for listening.

Until next time, it's goodbye from me, Paul Turner.

Jan: And from me, Professor Jan Bebbington.

[Theme music]