

# Transcript

SIMON BELL: Hi, I'm Simon Bell. Welcome to this podcast celebrating the teaching and practise of systems at the Open University. I'm an emeritus prof in innovation and methodology at the OU and began my relationship with Systems in 1996. From my perspective, systems is primarily about our understanding of the world as series, sequence and balances of relationships. Flows between things. But other people have other ideas.

Today my guest is John Naughton. Welcome John.

JOHN NAUGHTON: Thank you. Nice to be here.

SIMON BELL: John, I'll say a few words about you just to sort of set you up so our audience know who I'm talking to. Professor John Naughton, senior research fellow at the University of Cambridge. Ex Open University but still beloved by all. Probably best known as the technology columnist for The Observer newspaper and also a prolific daily blogger.

John, we're setting this conversation up to talk about systems and what systems has been in our lives, how we've used it, how we've applied it. In an earlier exchange, I asked you to describe yourself. You described yourself as a recovering utopian and a vigorous critic of the tech industry. I thought that was a really nice handle actually to describe oneself. How does systems get into this. Are you a daily user of systems thinking?

JOHN NAUGHTON: Yeah, in the same way as I'm a daily breather of oxygen. I don't think of it as a specialist discipline. And it's a way of thinking. And people either-- I mean, many people have it and we spent a lot of time in the OU encouraging people to develop that kind of perspective and long after I left you've been doing it and so on. So I don't think of it as being applying systems thinking with capital letters.

SIMON BELL: OK, that sounds almost like you're sort of living it. So to somebody who is listening to this podcast and was thinking curiously, what defines somebody who's thinking systemically. How would you describe that? How would you respond to that question?

JOHN NAUGHTON: It's somebody who is inclined to look for some things in a particular situation or in a particular problem area or in a particular industry and the things one looks for are feedback loops. But all the time one thinks about boundaries. If you're thinking as I am doing quite a lot at the moment about the looming climate catastrophe. That when somebody touts a particular approach as being an important thing, my question is usually to say, well, where do we draw the boundary around this.

Let me give you an example. I have an electric car. And before that I had hybrid cars for a long time. And so the temptation is and people do say to me, well gosh you're doing your bit for the environment. Well, it depends. It depends where you draw these boundaries. I mean for example, my electric vehicle has no emissions and I make sure that it's charged at night using electricity which my electricity supplier says is derived from renewable resources and so on.

And therefore, in some sense it looks like a green vehicle. But it's only a green vehicle if you draw the boundary around the vehicle and my charger. And even then, once you inspect further you see it has this colossal battery. And it has, among other things, lithium and a lot of other stuff in it. And the environmental damage from lithium mining is significant and so on. And then there's the manufacturing of it. Some of it is made of steel and some is made of plastic and so on.

So when you look at it overall, its green credentials don't look that good. But that I think of as a classic kind of systems perspective, which I think ought to be part of everybody's mindset and way of thinking. But that's what I mean when I say-- I mean there is a discipline called systems analysis. There's systems analysis, there's systems thinking, there's system science and other stuff. But actually, when I say it's a way of thinking, that's what I mean.

SIMON BELL: It's almost like an internalised way of considering the world. It's just like, I'm a rationalist, I try to think about things in a reasonable way. I like to feel that I'm making rational decisions based upon evidence, that kind of thing. Similarly, I'm a systemicist, or I systemically. That is to say, I'm just aware that things affect each other and that the boundaries I draw are the ones that I impose upon the world. And there may be other boundaries which other people draw which are quite different to the ones that I draw.

But so for example, you can say here is a sustainable car. It's an electric car and it's good for the environment. Draw the boundary a bit wider, hey, it does lots of other things which aren't quite so good. So it's that kind of process.

JOHN NAUGHTON: Yeah, it is. The other thing where explicitly systemic thinking is helpful is when you're addressing different kinds of issues which are not necessarily involved with mechanical or electrical processes. For example, one of the things I've worked on for a long time is the implications of the internet for democratic societies.

And one of the things you need in order to understand that, you need to have a way of thinking about our information environment. And I think the most productive way of thinking about it is in ecological terms. In other words, we live, we inhabit a world which has an information ecosystem. In fact, it's a media ecosystem. And that ecosystem shapes culture. It shapes the way we are. It has transformed our societies ever since we have had any records.

I mean, when you think of-- if you think of Johannes Gutenberg. In 1455 he invents a way of printing by musical type. And nobody at the time understands that that is going to change everything, more or less. And if you wanted to do a thought experiment about that. We know when this revolution happened. It happened in 1455. Although it has to-- but 1455 is when the first Bible's emerge from his printing press. And then you do a thought experiment, which is that kind of 40 years later say a mediaeval more pollster is standing on the bridge on the Rhine at Mainz which is where Gutenberg lived. And if you ask him-- you stop people and ask them the question, excuse me sir, do you mind answering some questions and here's question four which is, on a scale of 1 to 5, where 1 is definitely know no and 5 is definitely yes, do you think that the invention by this guy Gutenberg will A, undermine the authority of the Catholic church, B, trigger and fuel a Protestant Reformation, C, enable the rise of what later became known as modern science, D, create entirely new industries and professions and classes, and E, change our conception of childhood. On a scale of 1 to 5.

You only have to do the thought experiment to realise it's absurd. Because 40 years after the first Bible, nobody had any idea that would happen. And yet, Gutenberg's invention shaped the world for 400 years. And then by creating an ecosystem, an information ecosystem, of which print was the key ingredient. Print and publishing and all the other stuff.

And then at the end of the 1980s a British computer scientist working at CERN in Geneva has an idea for creating a system for being able to locate and retrieve documents from all over the world for an international research lab. And he comes up with the idea for what he calls the worldwide web and he

gets permission from his boss to work on it for six months because his boss wants to get him off his ass. Well one, wants to get him out of his hair because he's very persistent. And he says, you can do it for six months.

And and Tim Berners-Lee, working more or less alone, maybe with five others, he invents what we now call the world wide web. And when he's done it, CERN is not interested in it because CERN-- I think his boss says to him, son look, we're a particle research lab. We do physics research. We don't do computer science. And in the end, what Tim does is that in the beginning of 1991 I think it is, he puts the whole thing, the code, the protocols and the computer software onto the internet server at CERN.

And in the process, just like Gutenberg all those years ago, he triggers a revolutionary change in humankind's information environment, in its ecosystem. OK? And from that you get a completely-- we now see the evolution of a different kind of culture and a different kind of society. And that's very significant. But it's significant in terms of the impact of an ecosystem on human society.

We think of it as a media ecosystem. And media is a plural of medium, which is an interesting word. Because to most of us it means a communications channel. But if you're a biologist, it means something different. It means a set of nutrients in a Petri dish in which organisms grow. And if you take that perspective on it, then our human culture is an organism that grows in a different kind of Petri dish. It's called a media ecosystem. And what has happened to us is that an ecosystem that we originally inhabited, which was relatively simple, has become immeasurably complex.

And it's no surprise then that our culture has changed. Now all of that is a systemic view of it. If you wanted a very crude way of describing it, the original print ecosystem was relatively simple. You can think of it like a desert ecosystem. And what we have now is something immeasurably more complex. It's like a rain forest. So you see what I mean? So that's the thing about thinking systemically infusing everything you look at.

SIMON BELL: And there is this sense that this is imperative. If we don't get better at thinking systemically, the complexity is just going to wipe us out isn't it?

JOHN NAUGHTON: If you want to be gloomy about this. Most of the time I don't want to be. But actually, what we need most of all is we need a theory of incompetent systems, i.e. systems that cannot fix themselves. And we may have-- we have at least two of those. One of them is about democracy being able to survive the unrestrained power of tech companies. That's one. I said democracies. Authoritarian states will have no difficulty with it. But democracies will.

And the other one is the climate thing. Because democracy in systemic terms have-- well, the liberal democracies that we have are relatively recent arrival on the scene. But they have, in the post-war, immediate post Second World War era they were extraordinarily successful. For a while. And then they started to unravel. The unravelling started in the 1970s probably and it's gone progressively worse ever since.

But the point about them is that they are slow to react. Liberal democracies are slow to react because of all kinds of-- there's a lot of vetocracy, vetoing, built into them. There's all that stuff about the legal process and so on. So it takes forever to do anything. But in the past, the history of them suggests that when they do wake up they can be very effective. But they need time. And my colleague David Runciman has a wonderful book with the title *The Confidence Trap*, which is about democracies.

When they finally wake up, they're very effective. But they need time. And the question about the climate thing is, do we have the necessary time now?

SIMON BELL: That's almost like a belief system isn't it? We almost come to the point where we say, I believe we have time, I'm an optimist, I think we can do this, we can pull it around. Or as many scientists now are, they are pessimists and they say no, we're actually, we're already on borrowed time. What we're seeing at present is already systemic outcomes of immeasurable effects. We've turned keys in locks that can't be unturned. And we haven't got the way of turning them anyway. Yeah, that kind of stuff.

JOHN NAUGHTON: If you're really systemic about it, what you think about is the global system. And actually, the planet doesn't need us. In fact, it probably would have been much better off if we'd never arrived as a species. And it'll do its stuff. So as one level, that's a kind of a realistic despair perhaps. And it may be foolish. Maybe it's not necessary. Maybe in the end, what happens is what David Runciman recounts in his History of Democracy, which is that eventually things get to a point where the system gets its act together.

The feedback loops and the nonlinearities in the system are so mysterious and so complicated. And the incentives are all perverse.

SIMON BELL: I'm trying desperately to think of a nice segue because we're out of time and I've got to close this conversation. We could clearly go on for a long time. I don't want to leave all podcast listeners in N despair. But it does sound like with the idea of the mysteries and the fact that we don't actually have the sort of like an Isaac Asimov style way of protecting and looking at the future and understanding it perfectly. It does sound like there's plenty of wriggle room, systemically speaking.

JOHN NAUGHTON: Well look, if you think about this thing differently. For example, if you're like Bill Gates who has, to his credit, been quite smart and thoughtful and perceptive about this for a long time. I mean Gates' view is, lots of things we can do, which would quite rapidly have an immediate effect. And there are some things we need to invent. But Gates' view about the history of technology and human ingenuity is that we will get them too.

So his thing is, OK, we need a lot of things. But many of the things we need we know already about we could do them. It's the carbon capture stuff. But we're good at magic. We have been in the past anyway.

SIMON BELL: John, thanks so much. I'm going to have to close the podcast at this point. If at some point in the future I come back to you and say, can you come and talk to me again, is that all right?

JOHN NAUGHTON: Yeah, but you might be depressed again so.

SIMON BELL: I'm not depressed. Thank you ever so much. John Naughton, thank you very much for this contribution today. Thank you.