I think we wrote that March, April, as things were starting. But it's the continued application of Newtonian scientific principles, linear causality. You know, Gregory Bateson, one of the great systems thinkers, understanders is of life, many ways you could describe him, you know, said "a person is not a billiard ball." You know, if you've got a billiard table and you've got enough computational power, then you can work out, when you pull the cue back and you hit the white ball, you can determine the resting point and time of every single one of those balls. Because you can do the calculations. But you know, he said, if you then turn around, and you hit, the person sitting next to you with the billiard cue, you can't work out what happens. Because you're not just, it's not just the physics that is in play there. And it's the application of that clean, clinical linear causality to biological systems to objectify and eliminate the relationality that constantly exists within living systems within life. Billiard balls are not alive, maybe at one level of abstraction they are. But for the purposes of being able to calculate velocities and resting places, and the sequence over time of what will happen on a billiard table, you can apply those very simple principles of causality. The problem is when you look through a biological lens, and you take some of the twisted malinterpretations of Darwinian evolutionary theory, rooted in this bizarre notion that survival of the fittest meant competition, that life was in competition with other life that is just nonsense. But it was supporting a scientific worldview, which was emerging through the industrial, the early industrialization era, which has then just been supercharged and super accelerated by the application of more and more advanced technologies, whether it's extraction and mining technologies, whether it's the application of phosphates and fertilisers to supercharge food, to be able to vaccinate ourselves against the fact that we've come up with a way to exponentially grow ourselves within a finite system. And exponentially, super exponentially extract and exploit and decimate. And to do that through a mechanism called money, which is an objectification. It's an elimination of relationships. As soon as you

wants us to play as if that is the world because if you are released as you are, if you engage in a course of psychedelics, or in a non-chemical way through the warm data processes that I spend a lot of my time on with Nora Bateson and the hundreds of warmies around the world who are exploring without really understanding what happens. But if you open a space for people to be confused together, exploring into a complex question, something does happen. There is a healing there is a generation there is a new forming of patterns that didn't exist before. Just like the disruption that happens with the taking of psychedelics psilocybin and other forms.

Scott Williams 24:13
This is a sort of the areas that we were starting to explore and that I'm hoping we can continue to explore more and not just in separate literature, but in in the heart of the intergovernmental processes. The spaces where the highest level of decisions are made, where the trillions are being deployed towards COVID recovery programmes at the moment in the absence of any sense of love and care, using exactly the same sorts of habitual reasonings of this is why we have to do it this way. "Don't be silly, Scott, don't talk to me about the fact that we're all part of nature and we're part of living systems and COVID has helped us to understand that. I don't understand that. I don't care about it. I'm not incentivized to do that. My salary is based on the fact that I don't understand that and if I start to understand it, then I get confused and then I'm what the hell do I do then man? I can't be confused. I'm the man, you know, with the microphone. I'm the one who has to tell people stuff." Wh5()4()17()4()4()13é)8()13()4()17

been led to believe that everything will fall apart and in absence of feeling cared for, and feeling loved, and being able to have a space to just really break down and cry, and just be very emotional about it. And I've worked through this myself, and I know others who have you, if you have to do that on your own, then, you know, suicide is a likely option, because it is terrifying. But we don't have to go through this alone, you know, we are here together, and we are able to hold and help each other. And there are more and more people who are holding, you know, lightly, you know, Dave's notion that we don't have to be in conflict, as we are exploring these different ways of being able to understand and perceive our world, we can actually hold all of them simultaneously. And it's the paradoxes that are actually very important for us to be able to hold together, your perspective, the way you observe, the way you describe your world is necessarily going to be different to mine. But it doesn't change the fact that we exist within the same world. But if that's a space of mutual learning, where I'm learning from you, and I'm learning from Zoe, and you're learning from me, and I don't come in as the expert, which I'm not coming into this conversation, as the expert. And you know, I'm very much sensing that neither of both of you that coming in with the perspective that the questions that we're asking are often just too simple. They're questions which are able to be served very directly by reductionist linear approaches. And they serve continuing narratives of growth and a GDP and a progress and all of that. But if we can explore different questions, and then put that science in service of those more, more complex questions that don't have answers, but we can get steers, we can get a bit of guidance, get a different range of scenarios and insights that maybe will help us to be able to shift our habits just a little bit, challenge them, then, then we're in a better position to be able to use all of the capabilities that we have built up through our evolutionary history, rather than just those, which gives us that nice sort of pr 3()25(t)17()8()4()4()13e)8(

nonlinear changes, the critical assumption of the relationship between past and future risk must now be revisited. And then we go on to say that human society is increasingly unable to understand or manage the risks they create. We are very much in a response space, because of much of what I've just talked about. We are still working very much on, you know, ex post situational changes, as opposed to getting further and further ex ante. And one of the things we call for in that report, which was actually meeting the challenge, which the governments of the world had signed up to, in, in my very favourite paragraph of all the paragraphs in all the intergovernmental agendas. And yeah, I'm a bit of an intergovernmental agenda geek, sure, but paragraph 15 within the Sendai framework, which hopefully if you know it, then you love it as much as I do. If you don't, then you should read it and start to love it too. And it was a very clever piece of wording, which basically took the framing of what we're trying to understand and manage from natural hazards and looking at them as individual natural hazards, which is what the Hyogo framework, the preceding framework did. It said if we can just understand earthquakes in geological risks better if we can just understand hydrometeorological risks a little bit better. And then we can be better at understanding hurricanes and cyclonic activity. And we can be, you know, better at understanding riverine flooding, and great, that's lovely, but that doesn't actually help us to understand what's happening in the system. And that was kind of what was the prevailing epistemology, prevailing way of thinking, we add these things together. And that gives us an understanding of the risk that New York City is exposed to. And more in particular, the human beings existing within New York City, which was interesting from an intellectual perspective, but not actually very useful. So paragraph 15, said, you know, it's all hazards from both manmade and natural origin, that there is no such thing as a natural disaster, the disaster is a result of the choices that we have made as to where we are going to exist, how we're going to exist, and even why we're existing there. And that we're not just looking at sudden, acute, we're looking at chronic to your point about chronic, slow onset, like desertification, like Arctic ice melt, like the slowdown of the ocean circulation system, and we talked about a synchronicity

experience the growth. And then, okay, we've got to do new things, but it lasts for a very short period of time. And then we go back to the same, the habit generator comes back in. So how can we, and that's very much what we're trying to explore here. That's what the Sendai framework said and it's what all the governments of the world have agreed they're going to do by 2030 is that they are going to take a preventative approach, they are going to finally implement the precautionary principle, which we broadly agreed back in 1992, in Rio, and that actually 10s of 1000s of years ago, humans agreed that the precautionary principle is a good idea, don't go alone, to go and fight the tiger. Because you're going to lose, take 10 people and spears and nets, hey, presto you've taken an ex ante preventative approach. Because, you know, all the dudes who went tried to take the tiger down because it was, you know, it was gonna be males, for a lot of people, they aren't here anymore. So we are very slow to learn, unfortunately, that the choices that we are making to continue to pursue linear trajectories are the exact choices which are resulting in our inability to be able to manage ex post the results of those choices. So we came up with this notion of a four dimensional topological map of risks through time. How can we create a pluralistic data, knowledge, understanding wisdom space, with everything that we have developed through scientific ways of understanding as well as indigenous ways of understanding? And how can we layer a bit of AI onto that to do some pattern recognition? How can we layer in some warm data type approaches to do different types of pattern recognition, to then be able to come up with this sort of visualisation, this representation, so that we can start to actually see what is happening, and to be able to start to get insights about the anomalies within systems performances, which give rise to the potential discontinuity of those systems on which we exist, which we're, you know, relying on to be able to exist, and then can we downscale and upscale all of those insights from the planetary and extra planetary down to individual buildings and individual communities to provide us a bunch of scenarios and insights for different decision compass from anyone who's trying to make a decision based on the stochastic nature of the reality that we exist within, but with a more trusted sense of this is everything that we actually know at this point in time and understand and this notion that I have a core elements approach, clearly data ecosystem, proper representation, the best representation, we can have the dynamic nature of the living systems in which we exist, dynamic nature of risk. To be able to allow people to actually make those trade-offs have a different decision compass. And, you know, Kate Raworth's donut economics is advocating a different decision compass, we need to have a donut, deal with the social foundations as well as the planetary boundaries simultaneously. To do that, you need to have a much better understanding of what happens when you do those complex trade-offs that we have through economic indicators and other measures. But beyond that, you need space to play. That's the fourth bit you need a place to play and to laugh, and to be a clown and to bring humour in. And importantly, to generate those stories which are rich in metaphors. The stories which help people make sense through the language of the gods, of the natural phenomena to which they are exposed in the absence of having the scientific information and understanding that we now have. But so much richness and complexity can be held within poetry, within art, within dance, within music, that it can then, regardless of expertise, or formal education, can be passed on. Don't do that, you know, don't take the first four days of salmon as they're running up the river. as Robin Kimura-Wao spoke about so beautifully in braiding sweetgrass, let the first four days go by, celebrate, have a four day party, the salmon is back, this is cool, let's party our arses off. Let's dance by the river and celebrate. And then we'll start to take some fish. And if we do that, then the salmon will run up, they will breed they will come back down again. And next year, hey, presto, we get another four Day party. Perfect. Sounds like a pretty good life to me. To counter that narrative of the horrors of the future, we

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life, that life no matter how terrifying it can be, when you exist with the sort of information that I sense that both you Tom and Zoe immerse yourself in, and how, how upsetting it is. That if you feel that you are cared for, and you are loved, and that you are being nourished as a human, then it's a lot easier to be caring and loving and nourishing towards others. And then very quickly, because all those power structures are not real, they're not real. Member states, governments of the United Nations and I do obviously work a lot for the United Nations. And I often get told, You can't

Zoe Varenne 1:06:52 I had one more sort of question, if that's all right, um, as I guess, someone who's not really started their professional career, and who's in a bit of an in between space, all of this has given me a lot to think about. And I think there's definitely a cognitive challenge, and I think also probably a cognitive resistance to comprehending and sort of engaging with the true nature and behaviour of systems. But also, it's so obvious that it's so important and imperative. I guess, what advice do you have for students of global politics who want to pursue systems analysis? And maybe, I guess, should Systems Analysis be incorporated into more than just global politics? Should it be incorporated into every profession in every field of study, because it is just so crucial?

Scott Williams 1:07:40
The liminal space, a beautiful space. I am an ultra-marathon runner and I trail run around the mountains and I often get up at three and four in the morning, even in winter and snow storms here in Switzerland and like you really are a lunatic. And, okay, by one definition, I'm a lunatic. But existing in that liminal space, as the edges blur between myself and the forest between myself and the mountain, myself and the rocks and the other creatures around me, opens up the possibility of other possibilities. And, I mean, this notion of professions and disciplines and, and career paths, they're imposed. They're imposed sort of possibility spaces. And, again, as I think I said earlier, you know, I'm not advocating an elimination of reductionist approaches to knowing things I think I couldn't possibly have got to where I've got to without going through, you know, I guess the meat grinder exercise of being a chartered accountant for an extended period of time, and learning how the system actually did function. So I think there's a huge value in pursuing courses of learning about what we actually, what our space of knowing is, to then be able to realise how tiny and insignificant that is. And then these liminal spaces Don't, don't close them off, you're always in a liminal space, if you choose to continue to live in a liminal space. You know, my daughter's 15, she's starting to make decisions about Okay, I need to make choices about which things that I'm going to study over the next couple of years to open up different pathways and possibilities to university and I'm probably not the best dad in the world to be able to help with that, because I don't really care about any of it because all of its artificial. All I would say is, you know, find things that you love that you can nourish yourself with, and that you can find a way to care and love and nourish others, as you're doing that you're not acquiring knowledge as a weapon. You're not acquiring it as a way to create a you know, a salary pathway, which the academic space is, you know, is as bad as the private sector space or like, just doesn't pay as well. And as bad as the government space about, you know, getting towards trajectory just to keep on going. Hell no. That makes it very hard to keep caring and nourishing. And as Einstein said, to have that widest possible circle of compassion. And I guess answer the last part of your question, yeah, this should be in everything this is, this is life. We, this, trying to, as we phrased it in chapter two, you know, trying to get a better understanding of the systemic nature of risk is what we talked about, but it's actually a better understanding of the systemic nature of life. But it's not actually a better understanding. It's just a remembering. Because, you know, when you're three or four before you go into formal education, you don't perceive any of these separations. You don't perceive politics and sociology and whatever is being separate. You don't have the language and you don't have the, the conforming and the training and the lathing, as I've often said, People you haven't been put on the lave around but someone sort of slowly chiselling all the really amazing, incredible bits of Zoe off, so that you fit on that laid and you're nice and smooth. And then you can be inserted into the system. God no, keep all the messy bits fight

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Tom Pegram 1:15:30
Thank you.

Zoe Varenne 1:15:31
Thank you so much.

Tom Pegram 1:15:33
Thanks for tuning into 'Imperfect Utopias' to get access to all of our content, and to stay up to date with future zoom calls, workshops and events and more. Check us out at ucl.ac.uk/global-governments. If you liked this content, please do leave us a comment and subscribe. Until next time!