MERLIN SHELDRAKE / ANDREW LEIGH / ESTHER DUFLO /
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THE PODCAST READER

WISDOM AND INSIGHTS FROM OUTSTANDING LONGFORM PODCASTS

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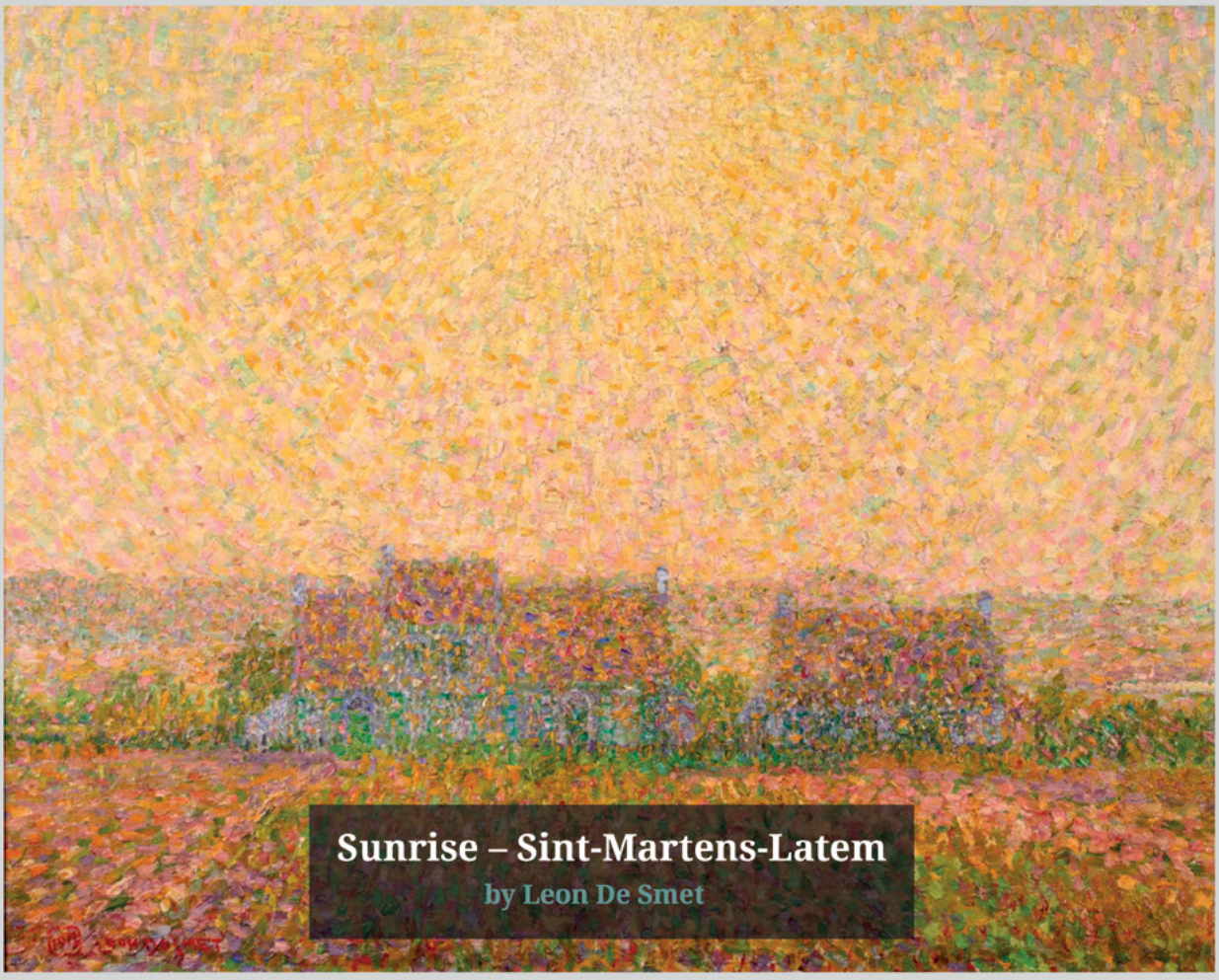

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THE PODCAST READER

Welcome to Issue Eight of *The Podcast Reader,* a more permanent platform for outstanding longform podcasts. While audio podcasts can be great, we feel it is too easy to be distracted when listening to them. Our curated transcripts make it easier to follow important ideas and highlight key points. In a world of digital distraction and ever shorter attention spans, we are proud to provide a more reflective platform for important ideas.

In this issue we present full transcripts from six longform podcast interviews, and edited highlights, or 'Podcast Bites', from a further three episodes. We cover three broad categories of content:

The frontiers of knowledge
Professor Steve Davis on advances in neuroscience and stroke treatment
Merlin Sheldrake on the wonder and potential of fungi
Helen Thompson on how economic history can inform the present

How to improve society
Esther Duflo on applying insights from economics to improve society
Andrew Leigh on how political processes can better consider existential risks
Henry Kissinger on statesmanship and the lessons of history
Chris Hohn on shareholder activism to persuade company management on climate risk

Just fascinating
Roy Foster on Irish history, literature and charm
George Osborne on the presidency of Lyndon B. Johnson

Each issue of *The Podcast Reader* aims to present content from the arts, entrepreneurship, history, public policy and science. In short, a cross-section of ideas that shape our world. Reader feedback is essential to help us learn and improve, so please don't hesitate to share your thoughts about the magazine at hello@podread.org.

The Podcast Reader acknowledges the Kulin Nation as Traditional Owners of the land on which it is situated in Melbourne and Geelong, and pays respect to their Elders, past, present and emerging.

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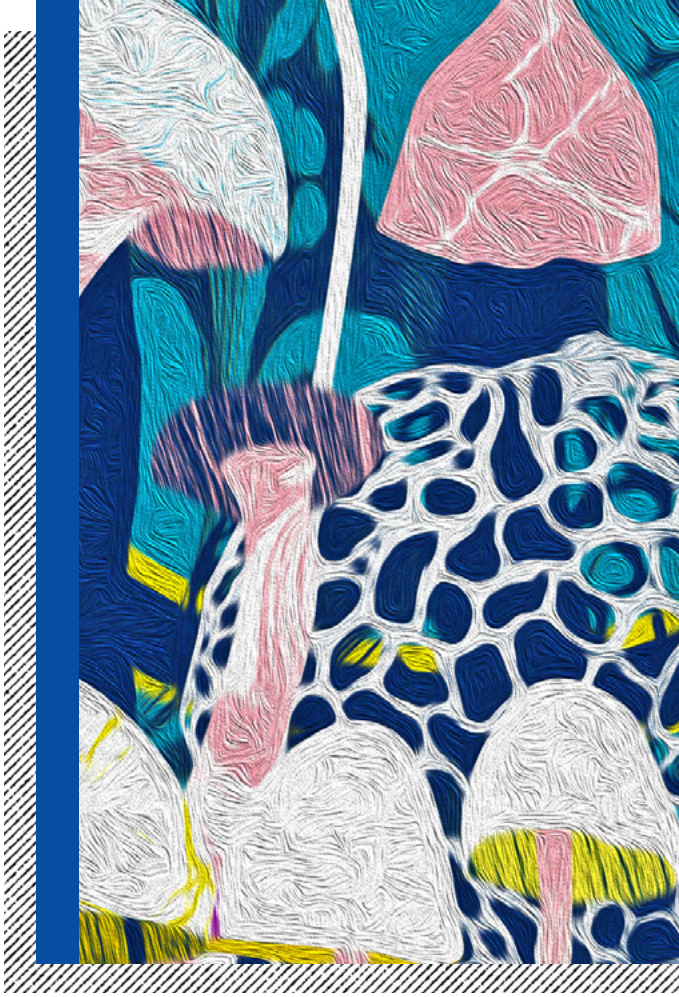
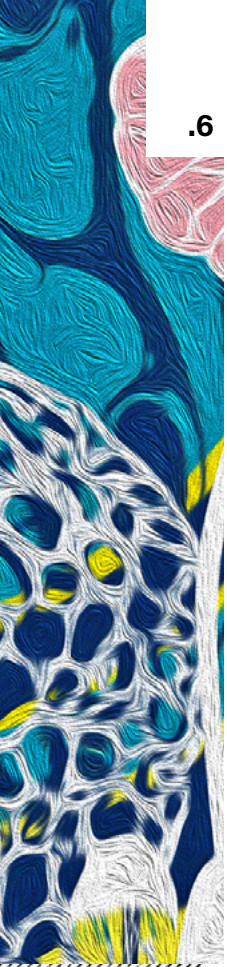
4. FEATURED GUESTS

Illustrations by: Vaughan Mossop





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“The question of when do you intervene to defend what you think of as your interests and your values, are the same questions that confronted the Johnson presidency.”

IAIN DALE

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FEATURED GUESTS

Stephen Davis is the Professor of Translational Neuroscience at the University of Melbourne, Director of the Melbourne Brain Centre at the Royal Melbourne Hospital and Co-Chair of the Australian Stroke Alliance. He was awarded an Order of Australia in 2021.

Esther Duflo is the Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics at MIT. She was awarded the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel in 2019. She is the author of Good Economics for Hard Times.

Roy Foster is an Irish historian and academic. He was the Carroll Professor of Irish History from 1991 until 2016 at Hertford College, Oxford. He was elected a Fellow of the Royal Historical Society in 1986. He is the author of many books, including *On Seamus Heaney*.

George Osborne was UK Chancellor of the Exchequer from 2010 until 2016. He is currently Chair of the British Museum and Chair of the EXOR Partners Council. He studied modern history at Oxford University.

Chris Hohn is Managing Partner of The Children's Investment Fund, a London-based hedge fund. He received an MBA from Harvard Business School. He was knighted in 2014 for services to philanthropy.

Henry Kissinger is a diplomat, author and consultant who served as United States Secretary of State and National Security Advisor. He received the 1973 Nobel Peace Prize, and is the author of many books, including *Leadership: Six Studies in World Strategy.*

Andrew Leigh MP is the Australian Assistant Minister for Competition, Charities and Treasury. He earned a PhD in Public Policy from Harvard, and is the author of many books, including *What's the Worst That Could Happen? Existential Risk and Extreme Politics.*

Merlin Sheldrake is a biologist, writer and speaker with a background in plant sciences, microbiology, ecology and the history and philosophy of science. He received a PhD in tropical ecology from Cambridge University.

Helen Thompson is Professor of Political Economy at Clare College, Cambridge. Her research focuses on the historical origins of the post-2008 economic and political world. She is the author of *Disorder: Hard Times in the 21st Century.*

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CONTACT US
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THE MAGIC OF MUSHROOMS

Exploring the world of fungi

MERLIN SHELDRAKE
ABC CONVERSATIONS

Interview by Sarah Kanowski
Illustration by Vaughan Mossop

Sarah Kanowski: Merlin is a biologist and he is fascinated by the world of fungi. Merlin has done many unusual things in the pursuit of his great passion. He has buried himself naked in a mound of decomposing wood chips, run after truffle dogs in the hills around Bologna, harvested bog myrtle from a marsh to brew medieval ale, and lain on a hospital bed as part of a clinical trial into LSD. Mushrooms are the most well-known emissaries from that world, but there is a whole teeming, complex, alive universe of fungi going on every moment right beneath our feet. And this is the world that Merlin brings to the surface in his book, *Entangled Life*. Merlin, am I right in assuming that fungi are plants?

Merlin Sheldrake: No. They're their own kingdom of life, as broad and busy a category as animals or plants, but a distinct kingdom of life from plants. They were lumped in with plants until the sixties when they won their independence, taxonomically speaking, along with bacteria who also won their independence in the sixties. And so, this has led to a lot of confusion over the years. But now we see them as independent. But that's a relatively recent distinction.

SK: But are they closer to plants than, say, animals? Would you think they have more in common by what is commonly understood by a plant?

MS: They have more in common with animals. They are more closely related to the animal kingdom. And unlike plants, which make their own food by eating light and carbon dioxide in the process of photosynthesis, fungi have to find food in the world, readymade as it were, and digest it, as we do too.

SK: Is it known how many species of fungi there are?

MS: There are estimates. And the best estimates are between 2.2 million and 3.8 million species. So that's about six times as many species of plant. And the main shocking statistic as regards fungal species is that we think we've only described about 6 per cent

of all the fungal species on the planet. So we're really just at the very beginning of our understanding of these astonishing organisms.

SK: Why is that? Why have they been so little studied?

MS: There are a few reasons. One of them is that they've long been lumped in with plants. So rather than having your own Department of Fungal Sciences at universities, the study of fungi was a dusty corner of the Plant Sciences Department, and it had to divide funding and resources and students with the plant world. So, it's always been this neglected little sibling of botany. I think that's part of it. But also, they are strange and peculiar and they defy our categories. Mushrooms are ephemeral, for example. They come up for a short period of time and then they rot and they go away again. Most of the fungal organism remains out of our sight, difficult for us to perceive, difficult for us to notice what it's doing.

SK: Literally under the ground, I'm guessing. Most are underground?

MS: Under the ground or just immersed in their food source. So, if they're eating a rotting log, they'll be within the rotting log, so out of our sight. It's only in recent years that we've developed technologies that allow us to access these fungal worlds, like much of the microbial world, DNA sequencing, for example, which allows us to sequence the DNA of the organisms and work out who is where.

SK: From what scientists do know how large can fungi grow?

MS: The largest-known organisms in the world, in fact, are fungal networks. There's one in Oregon which sprawls over about ten square kilometres, and it's a honey fungus, or Armillaria.

SK: Just one fungus that's ten square kilometres?

MS: Yes, exactly, somewhere between 2,000 and 8,000 years old, weighing hundreds of tonnes. But there are probably many older, larger ones. To find out the size of that particular individual, it took a lot of sampling. People had to go around and take samples of the fungus and then do genetic tests to make sure that it's the same organism.

SK: Because it's not like a blue whale or a sequoia tree which would be standing right in front of your eyes. It's hidden from view again, is it?

MS: Absolutely, yes, it's hidden. It's very hard to know whether this branch of the fungal network over here is the same individual as that branch a long way over there. So, we have to do this kind of testing to make sure of that. And for that reason, and because we can't do that kind of testing everywhere, in all the forests of the world, it's very unlikely that we've discovered the full extent of these fungal networks.

SK: I think of fungi as something soft and squidgy, but can they be strong? Or maybe forceful is a better term.

MS: Absolutely, yes. Mushrooms grow by inflating with water. They grow hydrologically. And some fungi can produce mushrooms which can push through asphalt roads or lift heavy paving stones, which is quite a well-known fact. But if you picked that very same mushroom that had just crunched through an asphalt road, you'd be able to fry it and eat it.

It is an amazing thing that this soft, fleshy mushroom can also produce that kind of force. Also, lots of fungi can burrow. Their mycelium can burrow into solid rock using high pressure and acid. So they're very powerful and resourceful digesters.

SK: You mentioned that giant honey fungi being many thousands of years old. How long have fungi been around on earth?

MS: So the best estimates at the moment put it about just over a billion years.

SK: A billion years, that's amazing.

MS: But there are some fossils that have been found from over 2 billion years ago which look very fungal. They look like the mycelial network. Those are really puzzling researchers at the moment because 2 billion years is a long time before we expected fungi to have branched off the tree of life. And yet here are these 2 billion-year-old fossils which look just like fungi, and no one knows quite how to make sense of them.

SK: And is there anywhere on earth without fungi?

MS: Well, yeasts, which are single-celled fungi, are everywhere, in the air and on the surface of organisms. There are fungal spores in the stratosphere. There are millions of tonnes of them, in fact, in the stratosphere. There are fungal networks in sulphurous sediments hundreds of metres below the ocean floor, stringing their way through coral reefs under the surface of the sea. There are fungi, really, everywhere.

SK: That range of environments – so they can withstand very great differences in temperature?

MS: Absolutely. You have extremophile, extreme-

> “
> … we think we’ve only described about 6 per cent of all the fungal species on the planet. So we’re really just at the very beginning of our understanding of these astonishing organisms.
> ”

loving fungi that thrive in the blasted reactor at Chernobyl, and they appear to be able to use the radiation as a source of energy, analogous to the way that plants use the energy in sunlight.

SK: Where in our evolution did we start forming relationships, deliberate relationships, with fungi?

MS: We’ve been forming unintentional relationships with fungi for longer than we can know. We have yeasts which line our orifices and live inside us and on us and play important parts in our very basic physiology. And those relationships will have been going on for an unknowably long time. We’ve been forming intentional relationships with yeast for thousands of years as a brewing and baking partner. And again, we don’t know quite how long that’s been going on for, but it’s likely it’s been going on for longer than we’ve been humans because other primates eat and enjoy over-fermented fruit. So, our relationship with alcohol and the yeasts that produce it is definitely old.

In all the preserved foods, miso, soya sauce, then there’s the alcohols and all these various ferments that we would have depended on for preservation of foods, that’s been going on for a very, very long time as well. So, our relationship is with fungi as food and as medicines.

SK: What about as medicine? When does that start in the human story?

MS: Well, the earliest evidence that we have is with a neanderthal human, found with evidence of a tooth abscess, an infected tooth. And this individual had been eating a penicillium mould, a penicillin-producing mould, and appeared to have knowledge of its medicinal properties, which is fascinating because this is really a very long time ago. It’s only in the 1920s that Alexander Fleming discovered that penicillium mould produced penicillin, which revolutionised modern medicine. So, this neanderthal find is some of the earliest evidence we have for self-medication using fungi.

SK: Do we use other medicines that come originally from fungi?

MS: Absolutely, many of them. There’s cyclosporin, an immunosuppressant that makes organ transplants possible. There are other antibiotics. There are statins, the cholesterol-lowering drugs. There’s Taxol, the blockbuster anti-cancer drug which is produced by fungi that live in the needles of yew trees. Psilocybin, the psychedelic, which has been found to have an amazing ability to help relieve symptoms of depression and addiction and existential anxiety following terminal diagnoses. There’s a long list.

SK: This is an amazing sketch that you’re drawing, Merlin. When did you first become fascinated with fungi?

MS: Well, it happened bit by bit. When I was small, I was very interested in the way things change. I always was puzzled by when I looked at a log, and then over time, the log would become soil. The rotting, the decomposition, and how piles of leaves in the garden would become soil. And I always wondered how this happened. How did this change take place? Then I became interested in these invisible organisms that I was told about that oversee these transformations. I always tried to imagine them, because how could they be so powerful and yet so small that I couldn’t see them? That was always something which puzzled me and led me into fungi through this decomposition route. I’ve also long been interested in symbiosis. And that’s what really took my interest to this next level because I started studying these relationships that form between fungi and trees, these symbiotic relationships that make much of life on land possible.

SK: What did you get up to with fungi as a teenager?

MS: As a teenager, I grew mushrooms. I looked for mushrooms.

SK: Where did you grow your mushrooms?

MS: I grew mushrooms in my bedroom.

SK: Does that say something about the kind of climate in your bedroom or are bedrooms a good spot to grow mushrooms?

MS: It's a very good spot, as good a spot as anywhere. You can get mushroom kits which are very easy to grow. You just spray them with water and they can grow wherever there's a bit of light and where it's not too hot, not too cold. It's amazing to grow mushrooms from kits because you can see them sprouting and growing incredibly fast and you can see these amazing forms unfolding. You can almost see them in real time.

SK: Was it as a teenager that you started brewing as well?

MS: Absolutely, yes. So, then I started brewing, which was really this yeast exploration. And it was part of this decomposition story. The nice thing about brewing and fermenting in general is that you have domesticated a decomposition process. You've housed this rotting process, but in a jar or in a bottle or in a cardboard in your house. So not only can you see this transformation taking place as it bubbles and froths, but you can taste it.

I found this as a way to these little microcosms of these big biogeochemical cycles taking place on the planet that were over too big an area and too long a time to really notice intimately. But when you house them in a jar, you can get a sense of this kind of process, really these great chemical tides and weather systems that play themselves across the earth and which govern so much of the ecosystems that sustain us.

SK: Where did you source your ingredients from back then, Merlin?

MS: Well, it depends. I'd make wines and I'd make beers, but what was really exciting was when I got into brewing from historical recipes. I like these recipes because you find them in these old books, 200–300 years old. Yeasts were only discovered to be a microscopic organism in the nineteenth century. So, in many of these old recipes, yeasts are a silent companion, this invisible part of human culture. It became a really exciting process to brew these old texts into being and to have access to these old recipes and old ways of working with microbes before we knew what they were...

SK: So what sort of flavours, what sort of things did you brew up in your bedroom?

> "... instead of photosynthesising, it gets its energy from its fungal partners, the fungi that lace into the soil. It plugs into these fungal networks and obtains its sugars from other green plants, via the fungal networks."

MS: So many things. Gruit ales was one, medieval ales that were made before hops became the standard ingredient of beer. People made beer from grains, but also from all sorts of plants that happened to be around. So, if you were somewhere that hops didn't grow, you wouldn't use hops. Also, hops have a soporific effect. They're good for helping you to sleep. And some people wouldn't want to have beer that helped them sleep. You'd rather want to have a beer that made you awake or lively or whatever. So gruit ales were a great one, with yarrow and bog myrtle. Those produced those really quite euphoric beers. But also meads. Meads are always fun.

SK: Would you get your bog myrtle and whatever goes into a mead just from the countryside around you? I can't imagine you turning up at the local supermarket and finding all of the ingredients ready on the shelf there.

MS: No, I'd have to go and forage them from local marshes, in the case of the bog myrtle.

SK: What kind of flavours were you able to come up with? Were they drinks that you enjoyed drinking and sharing?

MS: Absolutely. They were delicious. Well, some of them were delicious...

SK: What's the worst one you ever made?

MS: Well, some of them, there's a world in which I can imagine it being good, but just something was wrong. Something didn't quite work. I'd always be fascinated to drink them myself because I'd learn something. But some of them, I could drink them out of some kind of academic interest, but not everyone wanted to do that with me.

SK: What did your family think about you on your home brewing journey when you were at high school and you were doing some of this stuff in your bedroom? What did your parents make of it?

MS: I think a sort of quiet amusement. My father also got into brewing. They were encouraging, really. They thought, well, you know, it's a way of learning about the natural world. And if they are going to drink beer, then they may as well make it themselves.

SK: You went on to study at Cambridge University. Where did you do your field research for your PhD?

MS: I was working in Panama at a research institute called The Smithsonian Tropical Research Institute. They have a field station on an island in the middle of a large lake which is, in fact, the Panama Canal. It's an amazing place to be because there are amazing facilities. So you can be in the jungle and then come back that day and you can have liquid nitrogen, if you need it, -80 freezers, centrifuges, all this kind of kit that allows you to do certain studies and which you wouldn't necessarily find in all field stations. So, it was very well resourced, and that made a lot of things possible that wouldn't otherwise be possible.

SK: What kind of life was there on that island, in that tropical part of Panama?

MS: It was amazing. It was full of biologists and ecologists doing all sorts of strange research. Those tropical forests are incredibly diverse. There are so many ways to be a living organism in the tropics. And the diversity of the flora and fauna and microflora and microfauna was matched by the diversity of the biologists who came there to study it.

There were people who would be studying what happens if lightning strikes trees, and some people were studying the way that ants travel between trees on lianas, and some people were studying the way that bumblebees travel through the forest, pollinating flowers. Some people would be studying the way that monkeys eat over-ripe fruits and some people would be studying how different types of birds lay their eggs and how they manage their sexual lives. Just a hugely long list of different things.

So, it was a very exciting place to be. When you are a field biologist, you're inside the flask. You're inside the test tube because you are walking around within the ecosystem that you're studying. When you're a lab biologist, the fragments of life you study are in tubes, in flasks, and you're in total control over them. So, there's this different power relation. If you're in the field, if you're in the jungle, in the forest you are studying, then you're somehow part of that situation. You've got to be humbler because storms come along and wash away the markers that you've used to lay out your experiment, and trees come crashing down on your apparatus, and humility sets in.

SK: What you got particularly interested in while you were there was a small, blue flower that grows in that part of Panama. What made those flowers so interesting to you?

MS: These flowers were very striking because they're small, they're about the height of a coffee cup, but with this very striking blue flower. They're a type of gentian. But they didn't have any green, nor leaves. So, it was just a thin, white stalk.

SK: If I go back to my high school biology, Merlin, no green, no leaves says to me that's not possible, because how can it photosynthesise?

MS: Well, it doesn't photosynthesise. So, it's an unusual type of plant because it's lost the ability to photosynthesise and it's lost its green colour, the chlorophyl that makes photosynthesis possible. Its leaves have shrunk to these tiny, little scales on its stalk. And instead of photosynthesising, it gets its energy from its fungal partners, the fungi that lace into the soil. It plugs into these fungal networks and obtains its sugars from other green plants, via the fungal networks.

SK: It grows and attaches physically into fungi underneath the soil?

MS: Yes. Almost all plants do this. Almost all plants have fungi that live in their roots and extend outwards into the soil, and which help them to find nutrients in the soil and find water in the soil. So, this is a very normal part of planthood.

But what these white flowers do, these Voyria, they were called, they would have fungi that would lace out through the soil and around the roots of another plant. And then that plant would be photosynthesising and those sugars would go down into the fungal network and then into the Voyria. So Voyria are able to get their nutrition from other plants via a fungal network.

SK: Was it a trade-off? Did that blue flower have to

give anything back into the system in return?

MS: The basic deal with these fungi is that the green plant would supply the fungus with sugars and lipids that it makes in photosynthesis – energy, basically – and the fungus would supply the plant with mineral nutrients that it has found in the soil, and they'd have a kind of trade going on. And that's how this relationship would work when the plant is green and photosynthesising. But in the case of Voyria, there couldn't be that trade because Voyria doesn't photosynthesise and so didn't seem to have anything to offer back to the fungus. That's partly why I was interested in it, because this plant was receiving from the fungus but didn't seem to be giving back to the fungus.

SK: The science writer, Michael Pollan, has been on Conversations, describing his experience with psychedelic drugs. How did your study of the blue Voyria lead to you taking LSD?

MS: I was doing some work in the Plant Sciences Department at Cambridge and I saw a poster on a wall that said, do you have a meaningful problem that needs solving? I thought, well, yes, I'm sure I do. Several. And so, I called the number – I wasn't sure if I was behaving irresponsibly or responsibly – but I called the number. It turned out that these people were recruiting scientists to take part in a study into the effects of LSD on the problem-solving ability of scientists. And it was an official study, government approved, in a clinical studies wing of a hospital. So, I signed up and went for my study. They gave us a dose of LSD. We would have our own room with an assistant. We'd been asked beforehand to define our work-related problems, some kind of problem in our inquiry that we were fumbling with, that we were struggling to unpick. The idea was that maybe LSD could help us approach old problems from new angles, and to find our way into these difficult parts of our studies and to change our perspective. So, I was lying there in this room and had this psychedelic experience. At some point in my trip, the assistant said, maybe it's time to think about your work-related problem. And so, I thought, oh my gosh, my work-related problem.

I started thinking about these flowers. I wanted to think about how it was that these flowers might be giving something back to the fungus in a way that we hadn't seen, we hadn't noticed. I had this very vivid experience of being underground in the soil and imagining this wild west of the soil, bustling with life, so many different types of organisms working in these astonishing ways with these chemical weather systems passing across these different parts of the soil.

A very vivid experience. I don't think these were any kind of biological facts that I was experiencing. It was just this vivid vision. But what it left me with was a sense that I had too often thought of these fungi as mechanical, schematic entities, the organisms that look like schoolteachers' diagrams on the classroom board. It made me remember that these were astonishing living organisms engaged in lives that we still struggle to understand. And it helped me to re-engage my imagination with the study of these organisms and re-engage my fascination.

SK: I want to ask you about intelligence. When you watch how fungi make their way around a labyrinth in a lab setting, tell me what you see.

MS: These studies are great. Some researchers have made microscopic labyrinths. So, a fungal network is called a mycelium, but a single fungal cell is called a hypha. Plural, hyphae. They are elongating cells that branch and fuse. If you put one hypha into a labyrinth – you can watch this through a microscope – when it gets to a forked path, it branches, takes both routes usually. So, you have this one cell becomes two, becomes four, becomes eight, as it explores this labyrinth. Yet all remain connected in one network. I always get very confused about singular and plural here when I watch this happening. It's like, is this one organism? Is this several? It does funny things to our minds, the way these networks behave.

SK: What's directing them as they do that, Merlin?

MS: This is one of the puzzles of these fungal networks. They are decentralised organisms. We have a head, and we have capital cities, and we have heads of states. We have heads and centralised bodies and we live in centralised social systems that mirror our centralised bodies. So, it's very hard for us to imagine how one could live in a different kind of way. Their control and coordination is somehow everywhere at once and nowhere in particular. And so, you can cut off little fragments of a network and you can turn it into a whole new network.

SK: So, fungi don't have a distinct brain the way that, as you say, we and other animals have, but is the whole network acting like a brain?

MS: Well, yes, if we think of a brain as a place where we integrate information and where we connect perception with action, where we make that link between the way we perceive the world and the way we then act in the world. So in that sense, fungal networks are a brain-like phenomenon because in these flexible networks, they are able to integrate information and they're able to link perception with

Photograph: Mathew Schwartz

action. We wouldn't necessarily say that they are brains, but we would say that they play the role that brains do in our bodies. But a very different kind of role, right? Because these are a very different kind of organism doing very different kinds of things and adapting to very different kinds of challenges.

SK: Is there any way of understanding or imagining whether the organism itself has a sense of it being part of the one thing? Like the bit that's spreading over one tree branch at one part of the forest and the bit that's spreading up through a rotten log on the other part, does it know that it's one thing?

MS: Yes. So this is one of the things that, as a fungal network, if you're one part of a fungal network and you bump into another fungal cell, an exploring fungal growing tip, you have to be able to tell whether that's part of you or a different network entirely. And if it's a different network entirely, is it a potentially hostile network or is it one that you can mate with? So, these are questions that mycelium and microbes in general have to deal with all the time. Plant roots do too. So, there is self-recognition and there are behaviours that allow these fungi to ascertain whether or not

> "The truffle has evolved to communicate its readiness to be eaten. And here are these humans and dogs which have evolved to communicate with each other about the truffle's communication to them. There is this whole nested ecology of interspecies communication."

this is a compatible network to fuse with or not. You can think of that as being, yes, the self/non-self-recognition.

SK: Can you describe some of the experiments that scientists have done to study this ability or this behaviour that seems so fundamental to fungi? I think it's Professor Boddy at Cardiff, what has she done?

MS: She's done these crazy experiments to examine the foraging behaviour of these networks. She would get a block of wood which is filled with a wood-rotting fungus, so this fungus is embedded in its food. And she puts this block of wood onto a dish and then places another block of wood a few inches away from that block of wood and then monitors the behaviour. And what you see is that the fungal network explores outwards from this rotting lump of wood and it causes all sorts of actions at once. It forms this fuzzy white circle. If we were dropped in a desert and had to set out in search for water, we'd have to pick one direction to travel in. But these fungal networks can explore in all directions at once. So outwards they go in this big, fuzzy circle.

When one part of the network discovers the other piece of wood, then the behaviour of the entire network changes and the fungus withdraws the parts of it which are exploring that have not found the block of wood, and thickens parts of it that are connecting with this new block of wood. And so, over a few days, the network completely remodels itself. It's a good example of the way these networks are both sprawling and rambling but also coordinated wholes that can constantly remodel themselves in response to differences and changes in their environment.

SK: I want to ask you about a particular kind of fungi, truffles, which, like mushrooms, are edible. How do they differ from mushrooms? What's the truffle solution to being a fungi?

MS: Truffles are a fruiting body, like a mushroom. They've evolved to be the way that the fungus disperses its spores. Truffles grow below the ground and have spores, but below ground the spores are unavailable to air currents and wind, and they are out of sight, so animals can't readily see them. So, their solution is to produce a loud and fascinating smell. This smell allows them to attract animals, and the animals then eat the truffles and carry them away and deposit them in their faeces. A truffle's ability to spread its spores depends entirely on its ability to attract an animal. But forests are busy places in olfactory terms and animals are distractable. Imagine a dog walking around in a forest full of smells. To catch the attention of the dog, to send that smell through several centimetres of damp soil, such a strong smell that it ribbons out into the forest and such a fascinating smell that the dog would drop everything it was doing and run after the smell and dig up the truffle and then eat it. This is why truffles have these astonishing smells and flavours. And it's no surprise perhaps that humans have fallen for them too.

> "The fungus has evolved to commandeer, to hijack the body of an animal and to get behind the steering wheel."

SK: Whereabouts did you go truffle hunting, Merlin?

MS: I went truffle hunting in America, in Oregon, but I also went truffle hunting in Italy. In Italy, I wanted to join some truffle hunters who were hunting for the elusive white truffle, Tuber magnatum, which has never been domesticated and has to be found in the wild.

SK: What were they like, the men you were hunting with, and their dogs? What kind of people are professional truffle hunters?

MS: Serious characters. There, it's all about turf. You've got to be able to find these incredibly valuable fungi in certain areas. So different people hunt in the same area, and you might be allies with them or rivals with them. It's very messy and there's a lot of skulduggery. One of the big, ugly sides of truffle hunting is people poison meatballs and put strychnine in puddles in the forest to poison dogs, if they're competitors.

There are accounts of vets in truffle hunting areas – the vets have all these poisoned dogs that they're

treating. I heard this account from one vet, and he said that the worst thing is you know that people bringing in their poisoned dogs are themselves likely to be the poisoners of the other dogs that you're treating. So, there's an ugly side, but that happens whenever humans are trading in a very valuable resource. And truffles are indeed a valuable resource.

SK: What happened on the day that you went? Was it exhausting, did you have to forage far before you could find any of these truffles?

MS: What's really amazing is the way that truffle hunters and their dogs have learned to communicate with each other. It was fun to be part of that because you realise that the truffle itself is engaged in a kind of communication with animals that may or may not be fascinated by it. The truffle has evolved to communicate its readiness to be eaten. And here are these humans and dogs which have evolved to communicate with each other about the truffle's communication to them. There is this whole nested ecology of interspecies communication. So, the dog runs around, zigzags around and when it goes after a truffle, there's a certain way that you can tell. Is it a one-paw dig or a two paw dig? Is it wagging its tail? Is it not wagging its tail?

SK: Wow. All that has been trained, to communicate between the dog and the owner?

MS: Yes, absolutely. We had two different truffle hunters and each of them had different methods. One was the old-school method for training truffle dogs, which is by hunger, and so had this very unkempt, hungry dog. The other one had this very well-loved dog that it trained as if it was a game. So, for one of the dogs, truffle hunting was a game, and for one of the dogs, truffle hunting meant food. So, there were these two different approaches.

SK: And which was better?

MS: Well, the hungry dog was a bit sharper and quicker off the mark. But the danger with the hungry dog was that the hunter had to be very careful that it wouldn't eat the truffle because a hungry dog eats the truffle. There are risks that come with training your dog through hunger.

SK: Did you manage to find any of the Piedmont white truffles on that day?

MS: Yes, we did. It was thrilling. The dog darted off and then the truffle hunter followed the dog and the other truffle hunter followed that truffle hunter then I followed that truffle hunter. We had this cascade of excitement. Then the dog was digging and the truffle hunter was digging with it to make sure it didn't eat the truffle. At a certain point, when the truffle is revealed, this smell comes up and it smells so much more vivid than it does in the weighing room because the smell is an active process. It's produced by living, metabolising smells. You can't dry a truffle and expect to taste it later, like you can do with some types of mushroom. It's a living summons. So, you smell this smell, in harmony with the fraying smell of the leaf mould, the damp breeze, the rotting wood, and this astonishing odour just ribbons up. So, it was a very vivid and powerful experience.

SK: I know it's so hard to describe smells but was it a pleasant smell or was it just a strong smell? What kind of adjectives come to your mind?

MS: I thought it was very pleasant, a fascinating smell, just quite unlike anything else, and one that really worked in this forest context. You could smell how it made a perfect chord with the other smells that were there. If I had smelt the truffle smell on its own, as I later did, in the weighing room or in a restaurant, then it stands out as this unusual smell. But it really made sense in the forest. You could tell that that smell had evolved there.

SK: The relationship that fungi have to animals and insects is a fascinating one. What are zombie fungi, Merlin, and how do they operate?

MS: This is a fascinating part of fungal life. There are these fungi – quite a large number of them, in fact as this ability has evolved multiple times – that can grow inside insects, and puppet their behaviour to serve the fungus' purpose. One example is a fungus called Ophiocordyceps, which infects carpenter ants. Normally these ants live in the damp shadows, the damp ground of forests, and height and light are instinctively avoided because these things, climbing up high, climbing into the light, make the ants vulnerable to predation. So, ants will avoid those cues. But when they get infected by Ophiocordyceps, they become fascinated by height and by light, by these things which they normally avoid. So the fungus can somehow override the ant's instincts and cause them to climb up high on these plant stems, a syndrome called summit disease. The ant climbs up high. And then at just the right height for the fungus to fruit, in the case of Ophiocordyceps, about 15 cm above the forest floor, the ant bites on to a vein on the underside of a leaf in what's called a death grip. And at that point, the fungus kills the ant and sprouts a stalk from its head and showers down spores on ants passing below so that it can re-infect them and continue its lifecycle.

So really what's happening is that this is a fungus in ants' clothing. This is not ant behaviour. This is fungus behaviour. The fungus has evolved to commandeer, to hijack the body of an animal and to get behind the steering wheel. And so that's Ophiocordyceps and carpenter ants, but there are many different sorts.

There is a different fungi that infect cicadas – the back third of the cicada falls off, but the fungus is so expertly able to arrange for its deterioration that it keeps its central nervous system and motor coordination intact.

SK: It means the cicada still flies around, even though the back half of it has disintegrated through the fungus. That helps spread the spores of the fungus, I guess?

MS: Yes. It's just spouting spores out of the cicada's broken back end.

SK: That's unbelievable. Is it known how fungi are able to do that? How do they control the behaviours of an insect?

MS: They grow through the body of an insect. They seem to do it by producing a cocktail of chemicals which acts on the insect's central nervous system, i.e. pharmacologically. It's not known whether the fungus interposes itself between the brain of the insect and its body and controls its muscles directly, or whether it controls the insects' brain and thus controls its muscles. So, mysteries remain.

But the chemicals that it uses to do so are very interesting because they relate to chemicals that we're familiar with and take as humans. So, in the case of cicadas, for example, it was recently found that these fungi, Massospora, that infect cicadas produce cathinone, which is an amphetamine, and psilocybin, which, as we know, is a psychedelic. So, what exactly this amphetamine and psychedelic are doing in the cicada's death flight, we're not sure.

SK: Incredible. And maybe it accounts for some of the distinctive nature of that death flight, if it's on meth and hallucinogens at the same time. That's a big end for the cicada. Merlin, as you're describing fungi, they just sound like the most amazing part of the world. If they haven't been the focus of study in academia, what kind of people, or where have they been studied over the last century or so? Who has taken the lead in exploring the world of fungi?

MS: There has been a lot of fungal research which has taken place by passionate amateurs. All realms of the life sciences have been driven by amateur enthusiasm for much of their history because it's only quite recently that we've had universities and university departments that make this formal study of the living world possible. So, amateurs are a big part of science in general, and the history of science, but particularly in mycology. Fungi have the power to inspire a kind of passionate curiosity in those who are interested in them. Today, we see DIY mycologists who are doing all sorts of fungal inquiry and working on new ways to live and work with these organisms.

SK: Can good science still come out of that DIY world, in your view?

MS: Absolutely, yes. Certain types of science you need to have usually quite expensive kit and access to specialised laboratories, so that's naturally harder to do if you don't have that kit and that access. But there is a lot of science that you can do without it. There are ingenious techniques being developed by DIY mycologists to cultivate fungi in kitchens without the need for fancy equipment. In this situation the limitation, the lack of equipment, actually drives innovation and drives these ingenious solutions.

SK: What about mycofabrication? What's that?

MS: Mycofabrication is using mycelium to build materials. This is one of the really exciting applications of fungi. You can grow mycelium in moulds to produce blocks of material that can be used as packaging. Dell, for example, ship their servers in mycelial packaging. Ikea are working out how to use mycelial packaging. You can also grow blocks to build structures from...

> "All realms of the life sciences have been driven by amateur enthusiasm for much of their history because it's only quite recently that we've had universities and university departments that make this formal study of the living world possible."

> “… mycoremediation – harnessing fungal appetites to break down toxic or recalcitrant pollutants that have been released into the environment. You can train fungi to break down all sorts of poisons.”

SK: Structures that you could live in, like building structures… Out of fungi?

MS: Exactly. Building structures, or acoustic tiles for sound baffling, or a leather-like material which may transform the fashion industry. Leather from animals is a very resource-intensive process. Imagine if you could just make leather growing it inside, on waste material, in a week.

SK: Given their extraordinary, voracious appetites, can fungi be trained to digest particular kinds of waste?

MS: Yes. This is a really exciting part of the fungal world and fungal applications. We call it mycoremediation – harnessing fungal appetites to break down toxic or recalcitrant pollutants that have been released into the environment. You can train fungi to break down all sorts of poisons.

The mycologist, Paul Stamets, in America, has a story about training some fungal strains to digest DMMP, which is a precursor to a toxic nerve gas. When you expose the fungi to this substance, you gradually increase the concentration of the substance and the fungi get used to it and work out how to metabolise it. In the end, you can cultivate the fungi on the substance as their sole food source, and they can dissemble it into its harmless constituents.

SK: Other examples you give, like cigarette butts and dirty nappies, things that seem, to the unfungally educated among us, to be impossible, fungi can break those sorts of things down too?

MS: Absolutely, yes. A radical mycologist in the States called Peter McCoy did this experiment with cigarette butts, used cigarette butts, which are contaminated with all sorts of things, like polyaromatic hydrocarbons, these nasty chemicals which are toxic to many decomposers. But when you expose these fungi to these cigarette butts in gradually increasing concentrations, in the end, you can grow the fungus on the toxic used cigarette butts as their sole food source. So this is really an exciting avenue for research.

SK: As someone who studies fungi, Merlin, what are you most curious about that might become clearer in 20 or 50 years’ time as people like you and other scientists and DIY enthusiasts work on the field? What thing about fungi are you keenest to get clearer on?

MS: One thing that I am particularly excited about is to learn more about how these fungal networks communicate with themselves. We’re finding out that in some types of fungus, they conduct electrical impulses along their cells, analogous to the action potentials that travel along human nerve cells. If we can study this more and work out how one part of a fungal network is able to stay in touch with another part of a fungal network, and possibly even learn to interpret these signals that it uses to communicate with itself, then we might be able to plug into fungal networks growing in an environment, say, through the soil and around tree roots and ranging through an ecosystem, and to eavesdrop, to listen to the way it’s communicating with itself and to use it as a kind of environmental sensor to learn about what’s taking place in that ecosystem.

That’s just one small example, but there are so many ways that these organisms change our understanding.

SK: Merlin, I have just loved being taken into the kingdom of fungi. It’s an extraordinary place. Thank you so much for speaking to me on Conversations.

MS: Well, thanks for having me. It’s been a pleasure.

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ON THE POLITICS OF LOOMING DISASTERS

How should we prepare for existential risk?

ANDREW LEIGH
MINDSCAPE

Interview by Sean Carroll
Illustration by Vaughan Mossop

Sean Carroll: Andrew has a new book called, *What's the Worst That Could Happen? Existential Risk and Extreme Politics*, a book about existential risks. Andrew, welcome to Mindscape.

Andrew Leigh: Thanks, Sean. Glad to be with you.

SC: We're talking about existential risks. Why don't you give us a list of some of your favourite existential risks. What are your top three to worry about when you're worried about these things?

AL: Existential risks are those things which would either end humanity or fundamentally alter the trajectory of the human project. I guess those I'm most concerned about would be nuclear war, bioterrorism and artificial intelligence gone awry. But you can think of other possibilities: unchecked climate change, even an asteroid hitting the Earth, which is featured in the new Netflix film, *Don't Look Up*. There is a plethora of ways things could go wrong, none of them probable, but the possibilities are big enough that I think it's worth us investing a bit more time and energy in making sure that they don't happen.

SC: Is there a distinction between existential risk in the sense of ending all of humanity or even all of life on Earth, versus causing incredible disruption that will be terrible without actually making us extinct? I don't really think of climate change as something that could literally end humanity on Earth, although it could cause tremendous disruption and poverty and hardship and so forth. Do you think that's an important distinction to make?

AL: Absolutely, because the distinction is one between future generations not existing and future generations having a diminished quality of life or the human project taking a couple of centuries to get back on track. I think climate change is a great example. It is the one where I was most hesitant initially to include it in a list of catastrophic risks. Eventually it was the work of Harvard scholar Martin Weitzman, who passed away a number of years ago, that persuaded me it was worth including. He makes the case that the odds of a six-degree climate rise might be one in 10, the odds of a 10-degree Celsius climate rise might be one in a 100. And if you're talking about a 10-degree rise, you're talking about something which takes us into the realms of catastrophe.

SC: Can you explain exactly how catastrophic it would be? Presumably all the ice sheets melt and the water level rises. You must have thought about this.

AL: Absolutely. You see a big rise in violence, which is strongly correlated with heat. You see huge loss of crops and potential global famines taking place.


06
FOOD STORAGE

Naturally, a range of coastal cities are immediately wiped out by the sea-level rise, but the degree of catastrophic weather events would be utterly unprecedented. There are a number of scientists who point to Venus, which millions of years back had an atmosphere not that different from Earth, but due to climate change is now completely uninhabitable, it's the hottest planet in the solar system, 460 degrees Celsius on the surface. It's that possibility of the second Venus scenario, if you like, that caused me to put climate change in the catastrophic risk basket.

SC: Well, let's see, there's a big difference between 10 degrees and a few hundred degrees. Are there atmospheric science mechanisms that will let us go totally haywire and become an almost Venus-like planet?

AL: Well, if you go to the particular Venus example, they had a runaway greenhouse effect, evaporating water led to a steam blanket, which warmed the planet even further. Then the water vapor broke into hydrogen and oxygen, and the hydrogen was literally swept away by solar winds. The process took place three and a half billion years ago, and took about 10 million years to get rid of the water on Venus. Again, we're talking about very low probabilities, but given how catastrophic it is, it seems to strengthen the case for sensible climate policies that avert temperature rises.

SC: That's very helpful. The worry about 10-degree temperature increase over 100 years, I guess there's a feeling that some people might have that climate change is somebody else's problem. If someone is already relatively well off, if they don't live near the coast, they probably have a feeling that they'll get through it okay. I think what you're saying is that it is not going to be as easy as people think.

AL: Yes, that's right. Climate change is the classic collective action problem, in which it is very easy to take the global litterbug approach – you know, if I just throw my trash on the sidewalk, then, really, that's not going to make a big difference to how messy the streets are, but if everyone does it it really does make a big difference. So just as we should pick up our trash, we should also have an interest in common-pool solutions. You're seeing more of that with the Paris Climate Talks and Glasgow talks, but we're a long way off where we need to be.

SC: Has your way of thinking about issues like this changed since you've become a working politician? You started out as an academic, now you can actually have a vote in some ways that professors don't. Did you learn more? Did you realise it's more important than you thought, or is it more or less what you expected?

AL: It's a great question. When I went into politics in 2010, I was not largely concerned with catastrophic risk. Climate change was on my radar, but certainly unchecked artificial intelligence wasn't. Thinking in a probabilistic sense and envisaging what it could be to end the human project that really brought catastrophic risk to do my attention. Toby Ord's estimate is that there is a one in six chance that the human project ends in the next century. If that's true, and continues to be true over the next millennium, then you can think of it as playing repeated rounds of Russian Roulette for a millennium. One in six chance that you die in a century, but a five in six chance you die in a millennium. So that then made me feel that this was an issue which was getting much too little attention. Particularly as a politician, I guess the lens I bring to the discussion around catastrophic risk is thinking about how populism makes the problem worse by causing a focus on the short-term rather than the long-term: destroying institutions, and undermining international cooperation. So that's my particular lens on catastrophic risk.

SC: When you first became a politician, when you started talking to your colleagues, did they just roll their eyes or do people in that position get it? Is there a common feeling that, with different degrees of urgency perhaps, we should worry about this kind of thing?

AL: The risks have ebbed and flowed. When I was a kid in the 1980s, I can remember having a conversation with one of my schoolmates, we must have been in grade four or something, we both agreed that there was no chance that we would finish high school because the world would be destroyed by a nuclear catastrophe. That was incredibly salient at that time. In recent years, I think people have taken on the notion that pandemics can be pretty serious, and climate change has also come to the fore. But unchecked artificial intelligence, which on my estimate is the most worrying catastrophic risk, is still regarded by many as being in the realm of science fiction. So, the individual risks have been taken on sporadically by the political establishment, but less so the notion of catastrophic risk as a whole.

SC: I think that makes sense, that's what I would have guessed. Do you feel that when you talk to them about it, they're willing to listen? I can imagine that as a working politician, they're like, 'How does this get me votes back home? This is not something where people's attention is really focused.'

> “Venus [...] had a runaway greenhouse effect, evaporating water led to a steam blanket, which warmed the planet even further. Then the water vapor broke into hydrogen and oxygen, and the hydrogen was literally swept away by solar winds.”

AL: Yeah, although, it's interesting. Take that moment in 1998 when the Bruce Willis film, *Armageddon*, and the Steven Spielberg movie, *Deep Impact*, came out. Immediately, there was a response. NASA sets up its Planetary Defense Coordination Office, you have Ted Cruz famously asking in a hearing, 'What steps do we have to be taking so we don't have to rely on sending Bruce Willis to space to save humanity?' and big increases in spending on planetary defence and tracking near-Earth objects. In some sense, politics has tackled that one. It's response to asteroids isn't perfect, but we've responded in a pretty bipartisan way in most countries around the world. And yet climate change is the opposite. Here, people are deeply, deeply divided, and there hasn't been the same sort of unified response, at least in the United States and Australia, that we've seen to asteroid risk.

SC: You're saying something provocative by giving credit to two Hollywood blockbusters for political action on asteroids. Is that a lesson for people who do care about things that maybe we should be trying harder to leverage popular culture to get people worked up about this?

AL: I think that's probably the exception rather than the rule because there have been so many movies about catastrophe. It's one of Hollywood's favourite genres. Think about the pandemic movies: *Outbreak, Carriers, Contagion;* the bioterrorism movies: *12 Monkeys, V for Vendetta*; the nuclear war movies: *Dr. Strangelove, On the Beach;* artificial intelligence movies: *Avengers: Age of Ultron*, *Terminator*; and even the climate change movies, *Waterworld, Mad Max: Fury Road, Blade Runner 2049*. Hollywood has got us to the edge of our seats, but that hasn't always gotten people off the couch to deal with catastrophic risk. The analogy I often draw is about buying insurance for your home burning down, it's not a probable event, but you spend a very small share of your annual income taking out home insurance because it would be catastrophic for your household if it happened.

SC: I think it's a very good way of putting it, it's not enough to have a big scary movie. It has to be right place, right time, etc. Since you're a working politician, tell me if I'm too worried about this, but I worry that politicians have become too good at turning any issue into a partisan issue, and the fact that one side will be for doing something automatically makes it suspect to another side, and you can get people excited about that.

AL: I often think about that Ronald Reagan line, 'If only we had aliens coming to Earth, we could get the Russians, the Americans, to unite around a common enemy.' Maybe that's why things worked in the case of asteroid strikes, because it was the closest to what Reagan envisaged. But when it comes to nuclear disarmament, we're a long way away from that. There is a strong partisan divide between hawks and doves, and less of a recognition that reducing the nuclear arsenal would reduce the chance of a mistake beyond anything else, as well as measures like taking missiles off hair-trigger alert and allowing call-back systems within missiles. All of these tend to be opposed by some of the hawks in the military establishment even although you've had Republicans like Henry Kissinger from time to time coming out and saying, 'Look, reducing the size of the nuclear stockpile would make America safer.'

SC: You mentioned the number, one-sixth, that philosopher Toby Ord calculates as an estimate. First question: where does that come from? How in the world do we come up with a number like one chance in six within a century?

AL: One in six is Toby's estimate of putting together the total natural risks: asteroids, supervocalnoes, stellar explosions; and then the anthropogenic risks which are much bigger: nuclear war, climate catastrophe, pandemics which occur so-called naturally, pandemics that are engineered, artificial intelligence, and I would add to Toby's list, widespread authoritarianism enabled by surveillance technologies. So, if you put all of those together you get a risk that's in the ballpark of one in six. Just to give you a kind of a benchmark for what that means, that's about the chance that if you're 90 years old, you'll die within a year.

SC: As a good Bayesian, I'm entirely on board with the idea that we should be thinking about these probabilities, but when it comes to something like the probability of nuclear war, I'm just at a loss of how to actually do it. I think I would have given a very different answer in 1970, 1980, 1990 and 2000. How do we get confidence in these numbers that we try to cook up?

AL: These are heavily back-of-the-envelope numbers. What we're doing here is envisaging both the probability of the event multiplied by the chance that if it happened it would cause catastrophe. The research around nuclear winters is important because you want to envisage not only what is the probability that nuclear weapons are launched, but in the event that happens, how does that then affect the planet overall. We don't have a good sense of either of those, but they are the two things we're multiplying together.

SC: In the case of nuclear war do you have any more details of where that number comes from? It must be someone's estimate of the chances that some politician is going to do something terrible.

AL: The chance a politician will do something terrible, or the chance that there's just a mistake being made within the system. Given that you've got tens of thousands of nuclear weapons on hair-trigger alert, you want to envisage problems like the one that we had in the Cuban missile crisis, where a Soviet submarine had depth charges being dropped near it, thinking that it was under attack, almost firing its nuclear missiles by mistake. So, the chance of an accidental misfire then leading into a cascade is what you envisage. But yes, the best judgments by experts, they've got huge margins of error around them. What we're trying to do is get a sense of rough orders of magnitude rather than really nail down the last decimal point of the probability. The point is it's bigger than you'd think.

> "Toby Ord's estimate is that there is a one in six chance that the human project ends in the next century. If that's true, and continues to be true over the next millennium, then you can think of it as playing repeated rounds of Russian Roulette for a millennium."

SC: I like that answer very much. It's of the order 10 to the minus one, not 10 to the minus five. And that's the important distinction. Right?

AL: Precisely.

SC: We're being consequentialist in some way, we're weighing the value of our future lives, and this is always an interesting philosophical question. I know that economists like to discount the future a little bit because in part we're not there yet, in part because we don't know. If you were really doing a cost-benefit analysis about how much risk we should tolerate versus future damage..?

AL: I love that you've gone to the utilitarianism point because I think it is super important. If we just discount the future at the regular discount rate of, say, 5 per cent a year, then you get the results that future people aren't worth very much. Indeed, if you discount at a rate of 5 per cent, then you get the result that Christopher Columbus is worth more than all the eight billion people currently alive today, or similarly, that your life is more valuable than 8 billion lives in 500 years' time. If you think that's absurd, then you're having a problem with the notion of discounting human life, and I do too. I don't think future lives have any less value than current lives, and therefore that we should put massive weight on the not millions, not billions, but trillions of lives that will occupy this planet in the billion years before the Sun engulfs us,

Photograph: Kilian Karger

and the potential that if we get things wrong, those people never exist.

SC: I want to be on your side about this, and I think I am on your side about this, but I'm nevertheless going to push back. I don't think I could defend this with any rigor myself, because there's just so much we don't know. Sure, billions of people in the future are valuable and we don't want to harm them unnecessarily or even expose them to risk if we can avoid it. On the other hand, how do we know that what we do now can't be fixed with something pretty easily 10 years from now, and the billions of people in the future are fine? So even though we care about them, knowing what to do for their benefit seems very hard.

AL: There's uncertainty and there's the possibility that we come up with another solution. But in my view, that's different from discounting Sean. It's not that those people are less valuable, you might say they have equal value, yet I'm choosing to take a different set of actions in anticipation of change technologies that might emerge. That's a reasonable approach in my view. But I share the view of philosopher Will MacAskill, who says the idea that we're more valuable than future generations, is almost a form of prejudice that seems to be on par with racism and sexism. He calls it presentism. The idea that we're putting our inherent moral value above those of people who live in the future. It's presentism to say that Christopher Columbus is worth more than people today, it's presentism to say that we are worth more than people in hundreds of years' time. We should value their existences, which let's hope will be far more pleasurable than ours. They should be able to live lives of greater meaning and enjoyment, duration and health than people alive today, and so we ought to be protecting them.

SC: I certainly do want to protect them, but I would also like to develop a non-utilitarian justification for doing that. It's exactly in these cases where you're multiplying a tiny amount of risk by billions of people being affected that I think utilitarianism is on shakiest ground. Are there other justifications for taking dramatic action now, more, deontological or virtue ethicist sort of reasons, like it's just the right thing to do?

AL: You can think about these as your descendants if you like. If you have kids – an argument which is probably less immediately tractable to people without kids – but if you love your kids, you'll love your grandkids. There's no reason you shouldn't love your great, great grandkids who you'll probably never meet, or your great, great, great, great, great grandkids who you'll certainly never meet. That sort of moral obligation to one's genetic line argument could well be powerful with some.

SC: Good. I got my philosophical itch scratched a little bit there. Let's get down to more brass tacks. Let's walk through some of the biggest existential risks, because they're all different. They all demand slightly different responses. Maybe we can start with the natural ones. There's a set of things like volcanoes, asteroids even. I don't know if there's something that qualifies as an earthquake or a solar flare that would be truly disastrous. How do we plan for these things that are kind of random, but really catastrophic when they happen?

AL: In the case of asteroids, we've done pretty well with the Planetary Defense Office. In the case of supervolcanoes, it's harder. We seem to be particularly poor at predicting geological events. Supervocalnoes are planet changing, an event which could cause complete global crop failures, massive livestock deaths, huge disease spread and so on. The last one was a New Zealand volcano, 26,000 years ago. So, tens of thousands of years since we had a supervolcano, but we're poor at predicting them. So the odds that one comes along in the next century are low, but it would be great if we could get better at predicting them.

SC: Do you worry about solar flares very much? I once had a very scary conversation with a lawyer who was on some committee to study this, and he said once every thousand years there will be solar flares big enough to knock out our entire electrical grid on Earth and millions of people will die.

AL: I've got them in the overall category of unknown and non-anthropogenic risks. There's certainly a range of things that could happen. The fact that we have been around on the Earth for a couple of hundred thousand years without being wiped out by one of these things suggests that the odds in the next century are relatively low. But again, the better we can forecast what's coming to us from out of the atmosphere, the better and safer we'll be.

SC: I guess asteroids, volcanoes and solar flares are all paradigms for the issue of let's calculate a rate of risk per year, rather than climate change, which we see happening – it's just a matter of how much it happens. But where there's a rate of something happening pretty quickly, how do you, as a policy maker, decide how much money to spend? Are there a set of rational utilitarians somewhere saying, 'Okay, we need to spend this much money per year to prevent this risk happening with a certain percentage chance?'

> "What we're trying to do is get a sense of rough orders of magnitude rather than really nail down the last decimal point of the probability. The point is it's bigger than you'd think."

AL: An economist would love it if that was the case but of course, as you will know this is not the way in which the system works. Risk mitigation is better for natural events, but we need to calibrate the probabilities a little bit more precisely and try and get a better alignment of spending to risk. One of the values of the conversation around the value of a statistical life, which was controversial when it was first proposed, is that it did cause safety spending to be better targeted at those things where the additional money saved the most lives. And perhaps in the same way, this discussion about catastrophic risk probabilities might help tilt funding towards dealing with the most likely dangers.

SC: I like that. So, this is sort of effective altruism, effective charity for the world, for humanity as a whole, just by thinking about it and talking about it, maybe we will allocate our resources a little bit more rationally, is that the hope?

AL: Yes, that's right. I, like you, am a big fan of givewell.org, and one of the points that GiveWell make is that the difference between effective and ineffective charities isn't just two or three times, but potentially 100 or 1000 times efficacy. So likewise, when we're

looking at these catastrophic risks, we've got risks such as an asteroid impact, which over the next 100 years is probably a one in a million probability. The chance that a bioterrorism event knocks out the world's population, that's a one in thirty. So, these are very different probabilities, and yet we're probably not putting enough resources into making laboratories safer and making sure that terrorists don't get their hands on material that could be used to engineer the next pandemic.

SC: Let's move on to the topic of pandemics and bioterrorism – both natural pandemics and man-made pandemics. Presumably a different suite of responses or mitigation strategies are necessary for those.

AL: Yes, absolutely. Tracking zoonotic diseases has received considerable attention since COVID swept the world. We need to do better in terms of those natural pandemics, as well as taking steps such as working out how to reduce the risk of spread at so-called wet markets. But the biggest threat in my view is terrorists getting their hands on what the Nixon administration once called a poor man's atomic bomb and, for that, we might think about strengthening the Biological Weapons Convention, which currently has a monitoring budget smaller than the budget of the typical McDonald's restaurant. And making sure there are better controls over so-called Gain-of-Function Research in which researchers at respectable institutions look at how they're able to make bad bugs worse. There's an argument for doing that research, but the notion that we should just publish it and allow everyone to have access to these sorts of findings is, in my view, pretty dangerous.

SC: What is the current status of that? Can a biologist just publish whatever results they get along these lines or are they somehow restricted in a sort of classified knowledge kind of way?

AL: Let's take one of the recent examples. There was a team of researchers at the University of Alberta in Canada, who showed it was possible to make horsepox cousin, a cousin to smallpox, by ordering parts of DNA on the Internet and reassembling them. They showed they could do it for about $100,000 in about six months. They submitted those findings to *Science*, and *Science* said, 'No, we don't think that the scientific merit outweighs so-called Dual Use Research of Concern,' which was the *Science* editor's way of saying bad people getting a hold of the findings. But then the researchers simply sent the paper to another journal which then published it. So that's an issue that the scientific community is wrestling with at the moment. Having overall standards that cover not only journals but researchers themselves is going to be pretty important. I'd like it if there was as much attention being put into this as the considerable amount of attention that's being put in countries like the US and Australia to researchers who are collaborating with people in China.

SC: There is a hugely important fact lurking in the background of what you just said, which is that it sounds pretty easy to do bioterrorism. Maybe not me in my garage, but a halfway decent science lab might be able to just cook it up no matter what restrictions. Just sort of a random individual actor with a little bit of resources, can they really make a bug that would hurt a lot of people?

AL: Potentially. Genetic engineering is moving very fast. It's possible to print DNA and to, for example, upload a sequence and have the DNA of that shipped to you for very low cost. MIT's Kevin Esvelt has made an interesting proposal that any of these DNA printing outfits should have built into the machinery a system that checks essential segments of risky sequences, which then makes it difficult for people to print bugs such as the 1918 influenza strain.

SC: COVID in many ways is like a warning pandemic, even though it's been terrible and deadly, it could have been enormously worse. It has a relatively long incubation period, but it's not that fatal. If you wanted to design a bug that would be very, very deadly, could you design it to lurk inside people without any effects for months and then turn on and become extremely fatal? That's the worry, and once you're at the level of designing DNA, then why not?

AL: Yeah, that's the risk. So, you've got this spectrum that researchers talk about of deadliness and contagiousness, and typically viruses tend to be one or the other. Very deadly, so you think about untreated HIV; extremely contagious, you think about measles or malaria. But there are relatively few diseases, thankfully, which are both extremely contagious and extremely deadly. And so, the risk that you have a pathogen that ticks both those boxes is what people are worried about with natural pandemics, but all more so with bio-engineered pandemics.

SC: With a naturally occurring pandemic, the virus has a vested interest to not instantly kill everyone it infects because it wants to be passed on, but there's no such constraint on artificial ones. You could imagine designing a virus that is way more deadly than anything that we would imagine naturally occurring.

AL: Yes. And the rapid advances in genetic technology, they have huge potential in terms of disease alleviation and saving lives around the planet. We just need to make sure that as we put those innovations in place, we're not inadvertently assisting those who would look to make the pandemic equivalent of a dirty bomb.

SC: A tiny mitigating factor is that you can't point a dirty bomb very precisely. You would be in danger yourself of being adversely affected if you just set loose a terrible new disease on the world.

AL: Yes, that's right. And past attempts haven't proven successful. You think about the Aum Shinrikyo sect spreading anthrax in Tokyo subways. They did initially try and find some disease that they could unleash, but they weren't able to do it. So, they used sarin gas in the end, and that was because their attempts to bioengineer a disease hadn't worked out. Similarly, there was a set of poisonings in Oregon that took place in 1984. That's actually the worst biological terror attack in American history, which involved the poisoning of salad bars, that group had previously looked at spreading HIV/AIDS, but hadn't worked out how to weaponise it. So, terrorist groups have tried and failed in the past. The challenge is to ensure that they keep on failing in the future.

SC: I always presume that if there's some technology that could be used for better or for ill, it will be developed and it will be used by somebody. I presume that governments in secret are developing bio-weapons, even if they plan to never use them. Is government development of these kinds of things just as big a worry as terrorist group development?

AL: Look, I don't think so, in advanced countries at least. The decision that the Nixon administration made in putting in place the Biological Weapons Convention was that these are fundamentally weapons that are more useful to less powerful states, and that it's strongly in America's interest to not be involved in working on bugs as a form of weaponry. The US had a range of programs which it then shut down under the Nixon administration, following the Biological Weapons Convention. We've had some evidence that the shut down by the Soviets wasn't as complete, and certainly there have been other incidents such as Saddam Hussein's use of chemical weapons on his own people. But largely, I think it is the case that in advanced countries, there's not secret research going on into biological weapons because of the recognition that these are, as Nixon said, a poor man's atomic bomb.

SC: That makes some sense. I'm not quite sure because I never know what countries are doing in secret, but I think that the motivations that you mentioned do make a lot of sense. It would be sensible to imagine restrictions on either the technology or the publication of the technology. How specific are proposals along those lines to not let people just buy a DNA engineering kit or not publish the results if they figure out how to re-engineer smallpox?

AL: I think Kevin Esvelt's proposal is pretty specific and makes a lot of sense, and that ought to apply not only to firms that are shipping DNA, but also to benchtop DNA synthesis machines. That then becomes a question of ensuring that people can't do it at home. The concern around research publication, I think, has crystallised into a number of quite sensible proposals. It runs counter to the ethos that you and I are so familiar with in universities that publish or perish, the idea that when you've got new findings, you share them with the world. So, I can understand the discomfort that people have about keeping research silent, but in this case, I think it's strongly in the interest of humanity.

SC: But are there bills in front of parliament and so forth? How advanced is this effort to think this through?

AL: No, it's still in the realm of concrete policy proposals, but I certainly hope that it'll crystallise into clear codes of practice and legislation in the coming years.

SC: There are still the naturally occurring pandemics that we have to worry about. I'm a little depressed, as I think a lot of people are, at how badly we as a species, have responded to this particular pandemic. Do you think that we'll be better next time? Are there obvious, right things to do, or do you think that, going forward, pandemics are going to be political footballs, as we say here in the United States?

AL: I certainly hope that we're going to get better in terms of making sure that pandemics don't leak out of labs. There's a theory this one leaked out of a lab, I think that's probably wrong, but it's certainly the case that the last person to die of smallpox caught it from a lab leak rather than from naturally occurring smallpox. So we do need to be careful around lab leaks, and making sure that BSL-4 have better safeguards around them would make a lot of sense. We could also do more in terms of having detection facilities. One of the ways in which we picked up on COVID early was this program for monitoring emerging diseases, so-called ProMED, in which doctors were just posting findings that they found and ProMED was collating them together. ProMED's global budget is 1

million dollars a year, which is about what it costs to build a suburban playground. The idea that that's the best we can do as a planet seems nuts to me. I'd be increasing ProMED's budget substantially because I think they're one of our best early detection weapons against pandemics.

SC: We did a pretty good job of developing a vaccine, we did a much less good job of making it widely available, especially worldwide, and we did a terrible job at convincing people to take it, I would argue. Do you see plans to do better next time?

AL: As a politician, I've been thinking a lot about how you get ahead of disinformation. Certainly, a lot of the stuff I've read suggests that in some ways you want to inoculate people against the hoaxes before they come, because once a hoax has taken root in people's mind, it's quite hard to dislodge it. So, among Indigenous Australian communities, for example, the hoax has got there, in many cases, before the government, with the idea that the vaccine was being given to those communities first because it was being tested on them. Once that idea had taken root in communities, it's quite hard to vaccinate them. So as the overall Australian vaccination rate is good, the rate in indigenous communities is bad, and that's just a microcosm of the overall challenge of dealing with disinformation. We've got to get out there before the bad actors do, and warn people of the character of the disinformation messages that are to come.

Part of it is scientific literacy, part of it also is making sure that we're rigorously testing the anti-disinformation messages. There are a couple of good papers I've been reading recently, randomised trials, just testing different strategies, because it is one of those areas where your gut doesn't tell you very much. We now know that repeating the hoax can cause it to sink deeper into people's minds, and that sometimes it's better not to mention the lie at all.

SC: This is research in psychology? What is the research we have to do to understand this better?

AL: It's sort of a blend. The research that I've seen are a combination of public health and social psychology. And they come up with useful findings. The notion of the fact sandwich comes out of that. So, if you have to mention the lie, then start with the truth, mention the lie, mention the truth again, and so at least you're giving a double dose of truth for every time you mention the lie. That fact sandwich has come out of clever randomised trials on messaging. It's one part of dealing with this information, but it's going to be increasingly important if populism continues to maintain the hold that it's got in many advanced countries.

> "One of the values of the conversation around the value of a statistical life, which was controversial when it was first proposed, is that it did cause safety spending to be better targeted at those things where the additional money saved the most lives."

SC: I think we will get there, but it's not just disinformation. There's a motivation, a political motivation on some sides to take the, let's say, the anti-vaccination stance or something equivalent, and that seems like a tougher nut to crack in terms of prevention.

AL: Yeah, that's right. If you want to build a powerful support base, then finding an issue such as a conspiracy theory can be really useful. You go back to the way in which the Nazis used conspiracy theories about Jewish people to fuel their rise, conspiracy theories about African-Americans have been used throughout by various American populists, you see in India the use of conspiracy theories about Muslims to fuel the of Hindutva movement, which has taken over the ruling BJP. That sort of weaponising of conspiracy theories to spread fear about a small group in the population is a tried and true tactic for populists around the world.

SC: Yes. And how do we stop that? To ask you a completely unfair question...

AL: I think first of all we need to call it out, and calling out racism turns out to be a pretty effective way of combating the political weaponisation of racism. Recognising that the rise of populism does in part have its roots in economic problems, the loss of good middle class jobs with the hollowing out of manufacturing has been a source that populist anger has tapped into. Recognising too that you can't fight

fire with fire, and that if you're looking at an alternative political approach, then that needs to be the kind of calm stoic approach which characterises leaders such as Nelson Mandela, rather than a sort of angry approach which doesn't seem to be effective against populism.

SC: Correct me if I'm wrong, but the real lesson of thinking carefully about these existential risks is not just, 'Oh, against risk number one, we do this. Against risk number two, we do that,' but rather we have to think hard about our whole approach to politics, and even life, to really adapt to the fact that we face existential risk now in a way that maybe we didn't previously in human history.

AL: Yes, that's right. And strengthening democracy is an important way of reducing the hold that populism has gained on our politics. When I look at the US constitution, I regret that Jefferson's ambition of an update every generation has essentially been dropped for the last two generations, which means that you have a democracy that's not as democratic as it should be. I've talked about a number of democratic reforms that I think would make sense in the United States context: holding elections on weekends or holidays, reforming the electoral college, encouraging active citizenship, detailed community engagement rather than simply engaging on social media as a substitute for real political action. But we also need to realise that good politics involves acting with calmness and wisdom rather than trying to beat populists at their own game.

SC: That's a great message. Can you just say a little bit about what it's like to be in this Anglo-American, English-speaking tradition but be in a different country, in Australia? Do you have to kind of keep up with political and social movements in both where you are and in the US just because the US is so influential?

AL: I'm married to an American, I spent four years of my life in the US, I was as interested in American politics as the politics of any other country except my own. So it's a pleasure rather than a duty to follow American politics. But I do see so much in the American democratic experience that suggests that the beacon of democracy that America was two centuries ago is now shining less and less brightly. But I look at changes that might be required as essentially part of that responsibility that democracies have to keep on improving their systems, not to sit back and say, 'This is ideal, we'll never do anything more.' I suppose the most radical proposal I would have is to treat voting as a civic duty. Just as Americans are required to fill in the census, just as Americans are required to serve on juries, I think having compulsory voting would significantly improve turnout and make turnout more representative of the population as a whole.

SC: And am I right, that you have that in Australia?

AL: Yes, we do. Now we don't have a 100 per cent turn up, but we have a much higher turnout than most advanced countries do, not because people are fearful of being fined – the fine is less than one hour's average wage – but it is something which spurs a civic duty and makes people feel, 'It's election day. I will go and vote,' rather than, 'Will I or won't I go to the polls today?'

SC: This goes back to the idea we talked about briefly before, that politicians have become very good at weaponising potentially controversial issues. Even if one political party in the US got behind that, there's no chance the other one would. So, I'm very skeptical that things like that are going to actually happen.

AL: So this requires leaders who are willing to make decisions which are in the interests of public policy as a whole rather than simply in the interest of their narrow political party. We've got past examples of that, of leaderships of both parties that have chosen to make decisions in the national interest. But, like you, I worry that we're seeing less and less of it, and the increasingly tight hold that Donald Trump now exerts over the Republican Party is a real concern, and as is the fact that almost three-quarters of Republican voters believe that Donald Trump won the 2020 election. I think while you're in that environment, it's quite hard to get the requisite changes that ensure that America's democratic ideals are realised.

SC: I also perceive that the diminution of a devotion to democracy does occur on both sides of the political spectrum. Both sides here in the United States have lost any motivation for working along with the other side. I don't care whose fault it is, that's a bad situation for a democracy to be in.

AL: I agree. One of the most influential books for me in recent years has been Eitan Hersh's book, *Politics is for Power*, which makes the case that, increasingly, Americans are treating politics more like they treat their local sporting teams, cheer and jeer from the sidelines, rather than actually going out on the field and trying to make a difference. Eitan talks about the importance of getting involved in your local community, and trying to think of yourself very much as a player in the political spectrum. That also means that at a local level, because party labels are much less salient, you're much more likely to be working with people rather than just shouting at them.

SC: Interesting. That's a good recommendation. We've mentioned climate change a lot, but what is your take on the amount of progress we're currently making? We keep trying to have international agreements. It's hard to make them happen, and then people violate them. It seems to be kind of a recipe for cynicism.

AL: I'm certainly concerned that what came out of Glasgow is inadequate for what the planet needs. If you look at Climate Action Tracker, which looks at the number of nations that have implemented climate policies consistent with a two degree of warming target, it finds only a handful have done so. Many countries are insufficient or critically insufficient, including yours and mine, so we do need to do an awful lot more. What's striking about it is that a lot of it involves installing energy sources which are zero marginal cost, so ultimately a lot of this will pay for itself in cheaper energy.

SC: It seems like there is good news on the technology front. I mean, solar and other renewables have gotten cheaper a lot faster than people thought they would.

AL: Absolutely, and so the gains from installing them are substantial. What is important too is to think about this not just at a national level, but also at a community level. So if you've got a coal-fired power station which is slated for closure, then you can take advantage of the electricity connections coming into that plant, in order to use that as a site for a wind farm or a solar farm, create construction jobs that go along with that, as well as some maintenance jobs in the future.

SC: I like that. That's a very clever idea. The final risk I want to dwell on is the AI risk. This is one you said you hadn't really been conscious of when you came into your job, but you've read up on it and now you're kind of worried?

AL: Yes, absolutely. Again, we've got two questions: will it happen and how bad will it be if it happens? There are differences among artificial intelligence researchers regarding the point in time at which artificial intelligence will exceed human ability. The median guess in one recent survey was 2061. But almost no one working in the area says it's impossible, that computers will never outperform humans in the sorts of tasks we envisage, whether that's writing a best-selling book or driving a truck or solving mathematical problems. So then once computers go past us, what happens? Well, presumably, they accelerate past us at a pretty rapid rate.

Look at the performance of chess computers. If you put a chess computer up against a human, the chess computer now wins 99 per cent of the time, and in Go, the probability the machine wins is 99.99995 per cent. So, this is essentially saying that now computers playing these games are as likely to beat us as the world heavyweight boxing champion would be to beat me in a boxing match. So, once they accelerate past us, what do we know about their values? Well, we hope that they share our values, but I don't think that's locked in by any means. The possibility that super intelligent machines have a set of values that are either antithetical or more likely just orthogonal to it is a real one. We need to be very careful how we develop these computers, that they don't somehow damage our prospects as a species substantially.

SC: I have some skepticism about the rate of progress of AI and truly human general intelligence. I think it's very different than Go or chess, but for the worries that you have, it doesn't have to be. And it doesn't have to be human-like intelligence, as long as we are cedeing power in some way to these algorithms, we could get in trouble. What exactly would be the scenario that we're worried about? Imagine that AI becomes very, very smart. What is it going to do that will harm us? How specific could we be about that?

AL: Short answer is, we don't know, but you can take the Nick Bostrom example of a supercomputer which decides that it wants to build as many paper clips as possible, it doesn't wanna hurt us, but our buildings and our cars turn out to be good raw materials for paper clip building, and so it massively destroys humanity's prospects as a result. Or you can imagine that we try and encode our values, but we do so the wrong way. So, we say to the computer, 'We want you to maximise human happiness,' and it puts our brains in vats feeding drugs to maximise our pleasure centres.

AL: These sorts of problems called perverse instantiation do trouble artificial intelligence researchers, and suggests that we want computers which have three qualities: that they're observant, humble and altruistic. So, we're not locking in a particular moral code, but we're asking these supercomputers to watch us, to act in our interests and to recognise that there might be a lot of complexities about human society, and they want to be learning from that in order to help us. That all sounds great in principle, the trouble is if you've got an AI race, particularly one that's being conducted through the lens of global competition between superpowers, then you might end up with the first super intelligence not sharing our values.

SC: I have a lot of questions about this and I know this is not exactly your expertise. But if I have an algorithm running on my computer that just goes

Photograph: Maxim Tolchinskiy

bad and starts doing bad things, I can unplug my computer. So, I think that the scenarios that we're envisioning here are imagining not just an AI going bad, but some kind of embodied AI that is almost human-like in its capacities. What I worry is that we're being too anthropocentric. We're imagining AIs that are kind of human-like, but the real danger will come from AIs that have very different capacities that we haven't really thought about enough.

AL: So the reason we can't just switch it off on the wall is because if it's smarter than us, then it'll want to self-improve to acquire resources and resist being shut down, which means it'll do everything it can to try and avert a situation in which you just turn it off. There's a lovely analogy for this, Sean. There's an artificial intelligence agent which was designed to maximise its score in Tetris, that game where the bricks drop down. Now, as you know, Tetris can't be won, because, ultimately, the last brick comes into place. So, this game had a strategy that involved getting to the last moment and then pausing the game. And many people have noticed that the behaviour of that artificial intelligence agent is not that different from what you would envisage from a super intelligence which was resisting being turned off. So, we've seen it already in the lab to some extent, and defying shutdowns is going to be one of the things that a super intelligence puts a lot of resources into achieving.

SC: I like that example very, very much, but I do think that it actually highlights one of the distinctions here, because I can imagine an AI that is way more intelligent than I am at almost everything, much better at not only chess and Go, but symphonies and fiction writing, but has no self-preservation instincts at all. It seems like the angle here is that we should worry about giving AI self-preservation instincts.

AL: I'm not sure that I can envisage an AI which has any substantial desire but doesn't care about being turned off. I would have thought pretty much any desire you begin with ought to then effectively encode a desire not to be turned off. Ultimately, this comes down to whether Asimov's third law is necessary or unnecessary. His law is, 'Don't injure humans, obey orders and protect yourself.' Some people say protect yourself doesn't need to be in there because the other two are effectively encoded.

SC: Just to wrap things up with some final thoughts on the global strategy or the human-scale strategy. One thing I was interested in that you poo-pooed as a strategy is the Elon Musk idea of backing up the biosphere if we spread human beings out to other

planets. You didn't seem that much in favour of that one, or at least you weren't that impressed with that suggestion.

AL: Largely it's because I'm a cost-benefit guy, and when I look at the cost of that strategy, it seems to be massive relative to the cost of strategies such as better coordinating AI races between existing teams. There's also the massive loss that would come from the destruction of planet Earth and all that we've built here. So, I think we could do better in getting clear global guidelines on ethical AI. Interestingly, there was a proposal in 2018 from Justin Trudeau and Emmanuel Macron for an international panel on artificial intelligence. They had the international panel on climate change as a model, but the Trump administration didn't support it. In part because they thought it would impede the development of artificial intelligence. To which I'd respond it's only impeding the development of bad artificial intelligence. Let's get the guard rails in place before we build the highway. If you build the super intelligence first and then try and think about its ethical rules, you could find that you've left it too late.

SC: That makes sense. I like the cost-benefit angle. A final thing is this vaguely utopian but nevertheless attractive idea you have of thinking differently about these kinds of questions. Your book ends talking about wisdom and stoicism, which is not how most politicians' books end. How do we make people wiser and more stoic? That sounds like a big global project that I wouldn't even know how to start.

AL: I'm not sure that I have a good strategy for populating stoicism. I suspect Ryan Holiday is probably better on that than me, but it is the philosophical approach that, in my view, is the right strategy to respond to populism. The idea that we need the values of courage, prudence, justice and moderation. That we should be rewarding people who are being bold in the service of truth. That we should be celebrating a love of wisdom. That we should be encouraging fairness in the treatment of people. Also that living a calm and disciplined life rather than a shouty or a chaotic existence is to be celebrated. It's not as though we haven't seen examples of this rising to the top: look at Marcus Aurelius and the life of Epictetus, not to mention the success of Nelson Mandela, of Ghandi. It's a tradition with quite a rich lineage and one that I believe is the right strategy in an age in which we want to ensure that the population not only survives, but that millions of future generations come after us.

SC: Okay, but how do we do it? I'm totally in favour of this. What I worry is that you list some virtues and everyone goes, 'Yes, those are great virtues,' but then you operationalise them and people go, 'Oh no, I don't mean that. I didn't mean that we were going to let immigrants in, or whatever it is.' How do you make that connection between values that we're all willing to get behind and acting them out in the way that we're hoping people do?

AL: Well, for me as a politician, it's about resisting the urge to go for the jugular and to make personal attacks that aren't necessary, as well as recognising that when the temperature is turned up, it's generally not going to advantage those who care about the long term. All of these things can be pretty tempting, and there's certainly plenty of those who say that left-wing populism is the answer to right-wing populism. There's a sense in which this is a kind of personal project for any politician who wants to make a difference to reducing catastrophic risk whether they're on the left or the right. And you can identify plenty of those who've adhered to stoic values on the right over the years. But it's also something where you'd envisage celebrating a different kind of media engagement, for example. The shouting heads media engagement should be looked on as a spectacle of amusement rather than being a serious way of engaging in politics.

SC: Yes, and maybe at the end of the day, the best thing we can do is be exemplars of these virtues that we want other people to have, I guess.

AL: Precisely.

SC: Alright, that's something to aim for. I like it. I like leaving the podcast with a goal or something for people to think about and try to get better at. Andrew Leigh, thanks so much for being on the Mindscape.

AL: It's been a treat, Sean. Thank you.

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CLOSING THE GAP

The force of female leadership

ESTHER DUFLO
A PODCAST OF ONE'S OWN

Interview by Julia Gillard
Illustration by Vaughan Mossop

Julia Gillard: My guest today is Esther Duflo, Professor of Poverty Alleviation and Development Economics at the Massachusetts Institute of Technology and winner of the 2019 Nobel Prize for Economics, the youngest person and second woman to ever receive this award. We've had some pretty prestigious academics on the podcast before but never a Nobel laureate. I'm going to have to ask, what was it like to get that phone call? Can you talk us through that moment?

Esther Duflo: For someone who is sitting in North America it's usually a destabilising moment, because it happens in the middle of the night. Since they're calling from Sweden around 10 am their time, it turns out to be 4 am our time. So, obviously, I was sleeping and it was not in my frame of reference at all. So, it was a big surprise and they called me and said there is an important call from Sweden and I was like, what? What could be an important call from Sweden? When you get a phone call in the middle of the night with parents in Europe, your first reaction is something's happened to the parents. So that was obviously why I picked up the phone. Then I was like, I don't have relatives in Sweden, so that's good news. And then, we are calling to tell you that you won the Nobel Prize, and my reaction was, with whom? Because, of course, my husband is working with me and doing very similar work and so I wanted to make sure that he was involved. But with Michael Kremer and Abhijit Banerjee. I said, that's great, you want to talk to Abhijit? He's right there. I gave him the phone. Then they said you have to do a press conference in two hours, so you should grab a shower, get some tea and get ready for a press conference. And you, meaning me, have to do it because it has to be the woman in the group. So, my husband tells me great, I'm going back to sleep. I'm saying we just won the Nobel Prize. He said yes, but it's going to be a long day. And so, he went back to sleep and I got up and I got a shower, I got some tea and got ready for my press conference.

JG: Of course, you did win the Nobel Prize with your husband and with a male researcher who had worked

with you. Can you tell us when you were doing the work together and you were presenting as a research team, were there times when people reacted to the men in the group differently to you, when they looked at a research team of one woman and two men and kind of assumed that the men were in the lead?

ED: It's an interesting question. You have to add that they are both older than me and they are the pioneers of the field, so in some sense, to be perfectly fair, they are in the lead in the sense they are the ones who really launched this agenda. Then I joined them quickly after and then I also contributed to it, but I contributed to an agenda that both of them really put together.

However, you have to keep in mind that the reverse of gender discrimination is tokenism. And when you have very few women in the field, and economics is a field with very few women, then the few women that are there are actually in very high demand. Because everybody wants to display that they are not discriminating. So, if anything, I think in my career I've been the beneficiary of that, which is I have sometimes attracted credit that wasn't rightfully mine, or that should have been shared more widely because I am the woman and it's so convenient to have a woman. So, if anything, I've seen the opposite.

Also, within economics which is generally male-dominated, development economics is not. So, development economics, which is the study of poor countries and poor people, is actually quite gender-diversified. We run a lab called the Jameel Poverty Action Lab where almost all the top leadership both at the local level and at the country level are women. So, we work in a field which is full of strong, energetic women, so people are pretty used to seeing women, I think, in our part of the profession. I would have experienced much more of what you described in other subfields.

JG: Why do you think development economics, the study of poverty and poorer countries and what can be done to change that, why do you think that disproportionally includes women whereas other fields of economics do not?

ED: I think, for most women, if and when they decide to do economics, it's because they want to change the world. Probably not out of our innate nature as women, but more because of the education that girls receive and boys receive. Girls and women tend to develop the more altruistic, caring nature of their personalities. I am convinced boys could develop it too, and some do, but this is more socially encouraged for women. So when young women decide their field of study, I think many are not attracted by economics because they see it as the study of macro and interest rates and power, and they don't want to that. The ones who do come into economics are the ones who want to go into public policy, to work on how to improve the lot of people either in their own countries, or in developing countries. So that's why within economics you find women in development, you find women in public finance, you find women in labour economics, and you do not find them in macroeconomics or in theory.

JG: That's interesting. Now I want to take you back to the beginning. You grew up in Paris in the 1970s as the daughter of a mathematics professor father and a mother who, on top of being a paediatrician, also worked at a non-government organisation helping children who were the victims of war. What was it like growing up with such impressive role models, including the role model from your mother? And how do you think that influenced you?

ED: Well, I think I had a hugely privileged childhood. Not in the sense that we were hugely wealthy, but in the sense that I got exposed to culture and science, and a strong sense of altruism and your responsibility in the world from a very early age. And once you have that, then it stays with you. One way in which it stayed with me from the very beginning is because mother was spending time in countries which were ravaged by civil war or by wars, she would come back and show us photos and do little slide shows of what she had seen. As long as I can remember, but at least from the age of eight or nine, I felt very bothered and unhappy about the wedge between my childhood and the childhood of someone who lives where my mother was going: El Salvador or Madagascar or Morocco. I felt I have such a good life, what responsibility does that give me? I think perhaps that was a defining feature of what I was trying to become. For a long time, I did not know where this was taking me, and it was only around the age of 20 that I discovered economics as a possible solution to this problem. But it was always with me, the problem that somehow with the privilege I was born into, with that came the responsibility of doing something useful with my life.

JG: What role did gender and gender stereotyping play in your upbringing? When was the first moment that you can recall thinking to yourself that I'm being treated differently because I'm a girl?

ED: At least some version of it, forever, which is, I always wanted to be a boy. I don't want to say I was gender fluid, because I knew I was a girl, but I really regretted not being a boy. From the age of about five, when I can remember this to again about maybe 16 or 17, I was just so upset that I was not born a boy. I remember my parents explaining to me, but why?

> “... you have to keep in mind that the reverse of gender discrimination is tokenism. And when you have very few women in the field, and economics is a field with very few women, then the few women that are there are actually in very high demand. Because everybody wants to display that they are not discriminating.”

You can do whatever you want? And I still felt no, no, if only I was a boy, it would be so much better. From time to time I tried to think about that and say but why did I want to be a boy so much? And I think it was a reaction to the stereotype. I remember going to a Christmas party for my father's work and they gave engineering kits to boys and dolls to girls. And I was like, I don't want a doll, I want an engineering kit. So, I think it kind of sums it up. I was just offended by the stereotypes. Even though being born in France, it's not nearly as bad as what that would have been if I had been born in India, but they were still present. Not in my family, which kept saying you can do what you want, etc., but I could perceive them. I just didn't like to be boxed by that.

JG: That's really interesting that you felt it so strongly so early on. I want to fast forward now to your time at university in the 1990s. You weren't doing economics as your degree originally. You started out studying history. What was that moment of inspiration that made you say to yourself, economics is my thing?

ED: I had always wanted to study history for some reason. My father was an academic, and I always felt that I was also going to be an academic. I loved history so I always thought I would be an historian. Maybe from the age of eight I decided I would be an historian. But remember, I had that other thing in the back of my mind. I had this worry that what am I going to do to justify my luck? For a long time, these two thoughts didn't meet together. I was continuing my studies to become a nhistorian and being a diligent, good student. And on the other hand, I was trying to help in various NGO citizen movements, etc. But it was not entirely satisfying.

France has a system where you work very, very, very hard right after high school to go into competitive schools, and then after that you are a little bit set for life. Once I had finished those exams I could finally think okay, now what is it I'm going to do. I used to feel uncomfortable because I was privileged. Now I am really privileged. Now I am at the top of the French academic ladder. What am I going to do? Am I going to be a history professor? Like, really? So, I thought I have to do something else. I have to try something else. I picked economics, thinking that suppose it doesn't work out, at least it's going to be useful for history, so it's not a waste of time. So it was not a very deep decision to go into economics. In fact, I hated it initially. In my first year of economics I found it completely pointless to try to write down equations and graphs and to summarise how people think. I thought it was completely the wrong way to go about it. I guess the way I was taught economics early on, it was not really explained very well that there was a connection to the things I really cared about. So I didn't know that and I was all set to give up economics. Not being very happy with what I was doing with my life in terms of its usefulness, I thought I would take a year off and travel the world and then, during that time, think about what I want to do and maybe become a politician or prepare to work in the real world. I had this plan: I'm going to go to Russia for a year. I used to speak Russian, I'm going to use that time to think. I was all set to go into policy-making. And then in Russia, because of my economics background, I was able to work as a research assistant to a team of economists in Russia, and there my eyes totally opened to how powerful economists are. This was a time where Russia was transitioning and these economists, who frankly didn't know very much because nobody knew, found themselves redoing everything about Russia. And the degree of influence that they had was mind-boggling.

I felt two things. On the one hand, if I do economicsI can be really influential and change policy. On

the other hand, I better learn it very well and try to understand some part of it as well as I can because that influence could otherwise be quite dangerous. So in this moment in Russia everything came together because I felt I could be an academic, and yet I could be an academic that has influence on the world, and in particular on the question of poverty, which was still the foremost question in my mind. So that's when I decided the switch to economics, that's when my heart came to it.

JG: You have referred to the culture in economics as macho, even locker room. Is that how you experienced it? Was that something that you felt during the study of economics, or you felt during the practice of economics, and is it getting better or getting worse?

ED: Remember that I always wanted to be a boy. I think what that has left me with is that I'm very thick-skinned. I don't care. I don't mind. Nothing of that kind troubles me. I am, frankly, oblivious to sexism. Plus, I had the chance to come to MIT which is a very gentle culture. Within economics, it's known to be the place where the culture is the most gentle and friendly. So, as a result of these two things combined, no. Not at all. There were very few women in my programme, I think about only six women in my cohort. But the entire programme was very friendly. Then I started doing development economics which had women, where I found other women, and where the men that select into this field tend to be the gentle ones as well. So, my whole experience was very mellow from the beginning, and very pleasant.

At some level I didn't even realise that this locker-room culture was an issue until I finished graduate school and I started travelling to other departments and gathered the experience of others in the field. In some sense I think I was a bit oblivious to it and to its importance, also. And I was not alone there. I think the entire field was a bit oblivious to it for the longest time, and therefore nothing was done about it for the longest time. In contrast to the STEM fields where about ten years or 15 years ago they realised that they had a real problem in terms of gender balance and that it had probably something to do with how they treated women. And they really tried, and I think to some extent succeeded in attracting and keeping more women.

In economics we started a few years ago. The entire field, a bit at the same time as me, became aware that we had an issue. Aware that seminars, for example, were operating aggressively, and that the air in a lot of departments was off-putting to many women. And also, the image that we projected as being a profession of power and influence, as opposed to a profession that also cares about topics like world poverty and public policy, was another factor that was off-putting. So, I think things are improving. I don't think they have improved enough, but I think they are definitely improving. On this topic, like in many others, it's through a combination of little steps that you end up making progress.

> "... because of my economics background, I was able to work as a research assistant to a team of economists in Russia, and there my eyes totally opened to how powerful economists are."

JG: What role do you think the 2018 reckoning in economics as part of the Me Too movement played in all of this? There was a time when there were many stories being told about sexism and misogyny in economics. Do you think that that's been part of what spurred this movement for change?

ED: Yes, I think the Me Too movement definitely played a role in encouraging economists to also look a little bit inward. Another thing is the sense which developed in the profession that many people who are active in the profession were unhappy, that the atmosphere was not very good. In particular it was not very good for younger people, women and men, students, assistant professors and particularly difficult for young women. I don't know whether it would have happened in economics without Me Too. I think Me Too forced an acceleration of the reckoning because there was suddenly media attention that wasn't there before. A few isolated events were particularly visible in the media and that forced a discussion. I want to believe that that discussion would have happened anyway because we would have felt the pressure that we are a social science, we need diversity, we have no diversity, we are a completely white male-dominated field.

A social science needs a diversity of perspective.

It needs women. It also needs minorities, and our minority problem is much worse than our women problem, both in the numbers and also in the way that minorities are treated. We have very, very few black economists. Frankly, that's a disaster for the field because it affects the topics that people are talking about, it affects the way they are thinking about these topics and that affects the values and richness of our field. The question of racial diversity was completely absent and similarly came to the fore during the Black Lives Matter movement. So in quick succession we had Me Too that brought the question of women and then the Black Lives Matter that brought the question of minorities and, in particular, blacks for the US. And I do hope and actually strongly believe that the profession will become stronger for it.

JG: We could talk all day about your research, which is incredibly wide-ranging, but I do want to focus on one area and that's the area of female leadership and female empowerment in India, where you did some experiments into perceptions of female political leaders. Can you talk us through that research and what drew you to that field in particular?

ED: One thing that I also was upset about as a kid, even though I was upset about stereotypes, I hated them, I also was upset about anything looking like special accommodation for girls. I just hated the fact that girls had to do sewing and boys something else, but I also hated the idea that there would be quotas or reserved seats for women, as we can compete and we can outdo the boys and there is no reason to give us special favour.

I remember a discussion with my father. There used to be in the elite school I attended a girl track and a boy track. And they eliminated the girl track and when they did that, women all but disappeared. All of the seats were taken by boys, in particular in science. My father is a mathematician, and we had a discussion and he was really sad, really upset, and said this is a really big problem for the field. And I was like, why? They are not good enough, they should work harder and be good enough. There's no reason girls cannot do as well in math. And he told me no, it's not the way it works. Women can be excellent mathematicians and we need them in the field, and they think differently, they think about different problems, etc. But the way that they are educated, etc., makes them less able to take those exams. We lose them at the level of the competitive exam because they are not used to compete, or they are not trained to value competition, but in fact, we need them in the field. And this stayed with me as a question, not as something that I was convinced by, but as a question. I always wanted to study these policies. Is it a case that, in fact, when you have a special reservation for women, does it improve the situation for everyone else? And if so, then how come people don't realise that they also need to put in place systems that are going to encourage women leaders, like yourself, for example. So, I looked at various aspects of that.

In India, they had a policy where one-third of the villages in every election had to select a woman as mayor. And they decided that these villages needed to be randomly selected. The reason was otherwise the women were given the worst villages, the most remote places and they didn't want that. They decided fine, every election we organise a lottery, one-third of villages selected, only women can run there. And I thought this was a beautiful opportunity to look at what they do. What was interesting is that at the beginning of the research, which I did in West Bengal with a Bengali professor called Raghav Chattopadhyay, our field team was very convinced that the women were useless. They said there is no reason to do this study. In any case, they are the puppets of their husbands, they are not doing anything, so you're not going to find any difference. I said, sure, sure, let's do it anyway. We first collected data to see whether they acted differently, and we found that they invested in very different things. In particular, they invested much more in drinking water because this was the preference of women. But in general they were also more responsive to the preferences of people in the village. So that was interesting – that women were more able than men to carry out the preferences of women, and therefore it's important to have women in politics because otherwise the interests of women are never taken into account. And that started to move me in the direction of thinking maybe quotas are not that bad.

Then I was wondering whether there were other effects of having elected women and, in particular, what happened when you already had a woman in power. For example, people like our field team, would they be convinced by seeing a woman in politics? So what we did with several collaborators is we interviewed villagers about their opinion about female and male leaders. For example, we recorded a speech by female and male actors. We had people listen to the speech, either by the female or the male voice. Same speech. And we asked what do you think of this leader? Would you vote for them? What do you think of their quality as a leader?

In general, when the speech is given by a male, people give a higher rating. So that showed that there was very strong discrimination. But in places which had had a woman as leader, that difference entirely disappeared. So, people learned from their experience with one woman, even one cycle, that women can be good leaders. However, the one person they had already, like the trailblazer, they kicked out in the next election. But more women entered, and more women

were elected at various levels in places where there had been one of these trailblazers. The trailblazer paid the cost of being the trailblazer, politically. But a whole generation of women in politics was born as a result. So that really made me much more in favour of reservation than I was before. I was like, yes, women are good politicians but people don't know it, and they need to experience it to believe it. And by having quotas, especially rotating quotas, you force it.

Then we wrote a next paper, which is to look at whether having a woman as leader served as a role model, in general, for parents vis-à-vis their daughters. We interviewed teenagers and their parents about their career and their ambition. And we found that having a female leader closes the gap between the ambition that people have for their daughters versus their boys. And it is so powerful that it also increases the chance that they send them to middle school, which means that thanks to having a female leader, even though the female leader has nothing to do with the school directly, this is above her paygrade, just the presence of the female leader made parents send their girls to school and catch up with the boys. So in this you learn the role of role models, the importance of role models, the importance of lived experience to change discrimination and therefore makes me also optimistic that things can be changed, but it needs to be a little bit jump-started.

JG: I love it. It's just such a fantastic piece of research in every sense. The randomised controlled nature of it to give you the very clear comparisons. It's fantastic. Now, living as we have been in the era of the pandemic, what have you made of the dialogue about women leading better during the pandemic? And based on your research, what do you think the world needs to do next? Obviously in many public policy circles people are now talking about how we build back from the pandemic. What do you think we need do to?

ED: Given my research and in particular all this work on female leaders, I'm inclined to believe that women are, in general, better political leaders than men. Indeed, in the pandemic we saw very many very effective female leaders, including all of the ones that are familiar to you like Jacinda Ardern, but also, for example, the health minister of Kerala, who is a very powerful woman. Kerala was clearly attacked by the pandemic in terms of number of cases, but they had very, very few deaths because the state, under her leadership, was able to organise their healthcare system to help people out. So we have many examples of very successful female leaders. That said, I don't know if we can conclude from the pandemic and from this example that because they are women that they did better. Because another factor is that it's also different places that choose to elect a female leader. It's not an accident that you have a powerful female leader in Kerala, compared to other parts of India, because in general, Kerala is a state in India which has had the most gender balance, and the most progressive gender policy. So did they do well on COVID because they had a female leader, or did they elect a female leader because they're types of places that would elect a female leader? The same questions can be asked about Finland or about New Zealand or about Germany. And, after all, Australia also did well in the pandemic. So I don't know, and I don't think we'll find out from just looking at the pandemic. But we don't need to, in a sense, because we know it from other circumstances. We know it from the Indian cases, and we know from the pandemic that women are at least as good. Regardless of whether they were the cause for the better performance, or they were just a part of the package that led to the better performance, the truth is that they will still be a role model, and an example for people to look up to. Young woman and men will be able to look up to them, and therefore will, I hope, generate the same effect that we're seeing in West Bengal, which is you have some trailblazer and then people come in the footsteps of that. The pandemic might accelerate that regardless of whether their gender was the reason they did well. I'm not going to begrudge it. It's good anyway because it will be a good thing to have more women in politics. Again, it would be a good thing if women were not better by constructure, just because you need diversity. Because politicians are men and women, they are not algorithms that implement the will of people. As you would know I'm sure, from your own experience, they can run with their own heart and their own preferences and their own desires and their own lived experience. We know that from much research. So who they are, including their gender, will affect what they focus on, what is important. So in the same way that economics needs to be diverse, politics also needs to be diverse. It needs to have women, and needs to have men. But men seem to be there aplenty, so it's more important to focus on being sure that there are women.

JG: Men there are plenty – that's true in politics, absolutely, and in so many other fields. I'm going to turn now to the form of questions we use to conclude every interview. I always ask my guest about a fact. The fact for you actually comes from your book, *Good Economics for Hard Times*, so it's going to be very familiar to you. You argue in that book that attempts to end climate change cannot be separated from the fight against economic inequality. And we know that women feel this inequality most acutely. When the worst effects of climate change make land-based work impossible, women are often less able than men to

> We lose them at the level of the competitive exam because they are not used to compete, or they are not trained to value competition...

turn to other forms of work. So my fact for you is that nine in ten countries worldwide have laws impeding women's economic opportunities. For example, laws that bar women from factory jobs, working at night, or getting a job without permission from their husband. What role do you think economics has in addressing this urgent issue about economic freedom?

ED: Let me complete the fact, in a sense, which is nine out of ten countries worldwide have laws against participation of women in the labour market. And ten out of ten have some social norms that also prevent it at some level. In all countries, for example – we saw it very clearly in the pandemic – that if there was a need to have more labour at home because the children were not taken care of by schools anymore, it was women upon whom this burden fell. Also, when there is a need to share work, most people will reply to you in questionnaires that if one person has to sacrifice their career, it has to be the woman. So on top of this legal restriction there is also the social norm restriction. Economics has a lot to say about that, both about the cost to society of not having women working, and also about how to fight it and what can be done to encourage and facilitate the participation of women in the labour market. There is, in fact, a very active field of research on women in the labour market that studies these various aspects. I'll give you just one example where you might not necessarily expect an economics paper. It is work by Leonardo Bursztyn and David Yanagizawa-Drott on Saudi Arabia, where there are both restrictions to women's mobility and strong social norms against women working. They did a study with young men where they asked them whether they would be favourably inclined to have their wives work outside of the home. They also asked what they thought the opinion of other people in that same room might be. And what they found is that people are more liberal than what they think other people are. So, a majority of people would be okay having their wife working outside the house, but a vast majority of people thought that other people would not be okay. So, they did a very simple experiment: to half of them they told them, by the way, do you know that most of your friends think the same as you? Then they just waited. They gave people an opportunity to sign up for jobs: people could apply for a job that could be done either from home or from a back-office centre. And they found that people who had received the social norm intervention were more likely to let their wives work. This is a good moment to say that economics as a profession is not just about what you might think is hardcore economics. It's also about the interplay between a society and economic outcomes. And also about how to change things sometimes.

JG: Yes, to change behaviours and views. That's fascinating. Now a more personal question. What's the worst misogyny you've had to deal with in your career?

ED: Maybe the reaction to the paper on females as policy-makers. I was not the subject of the misogyny, but these women were. Whenever I presented this paper, particularly in India but also in other places, someone always said after I had presented the result, it can't be true because I have seen these women, they are just figureheads, they are not really doing the work. And I'm like – I just showed you. I just showed you that they do different things, and that people take notice. Can't you listen? But the strength of the misogyny is so strong that people will take their theory against the fact that has been presented to them. That might be the example that irritated me the most.

JG: I can understand why you were irritated by that. If you had all the power in the world for a moment, what would you change for women?

ED: There are still vast differences in the world, in infant mortality, child mortality and maternal mortality. These differences are really morally unacceptable. They are usually, both for women giving birth and for very young children, things that are preventable or treatable. So if I had all the power in the world, and it wouldn't even take God-like power, I think it would take good international collaboration and very strong leaders, I would make those differences disappear.

JG: That's a fantastic vision. Virginia Woolf says, we

Photograph: Michal Matlon

can best help you to prevent war not by repeating your words and following your methods, but by finding new words and creating new methods. Esther Duflo says?

ED: I'll take her word! In a sense what we are trying to do, what I'm trying to do, in my work is to create new methods, develop new methods, to find out what works and what doesn't work in the fight against poverty. I could almost take that particular sentence as my own motto. What has driven me in my work is that you can take on one fight at a time. One little fight at a time, and apply all the rigour and all the training and all the passion that you have, and really make progress. For that you might need to have to invent new words and new methods. And if you do that and do it and do it again, when you turn back after ten or 20 years, you will have made a difference.

JG: Absolutely and I'm sure many are going to love those words, but I know particularly the researchers at the Global Institute for Women's Leadership are. Thank you so much, what a wonderful conversation.

ED: Thank you so much. Thank you for the conversation.

A Podcast of One's Own

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CAPITAL FLOWS, DEMOCRACY, HISTORY AND CENTRAL BANKS

Democracy's aristocratic features

HELEN THOMPSON
LIBRARY OF MISTAKES

Interview by Russell Napier
Illustration by Vaughan Mossop

Russell Napier: I'm absolutely delighted today to have with me Professor Helen Thompson, professor of political economy at the University of Cambridge. If the world had ever needed political economists, it really, really needs them today. There are fewer and fewer of them around. And to back all that up, Helen has written a tremendous book called *Disorder*, which is what we're here to discuss today. First of all, Helen, congratulations on the book. It's a wonderful book for people like me who try to work out what are the real mechanisms going on in the world. I thought I understood it. Then I read your book and I realised there was another level. There are tremendously important things in here for investors.

I wanted to begin by reading an extract about capital flows. I meet very few historians, or very few economists, who focus on the role of capital flows. But you've done that. I wanted to read this and ask you to comment on it and explain this mechanism to our audience.

'Against this backdrop, it is unsurprising that by the mid-1980s when labour's bargaining power was decisively weakened, it was the risk of aristocratic, not democratic, excess that threatened individual democracies futures. Economically, it could scarcely be otherwise. There never was a possibility that a return to open international capital flows would not significantly magnify democracy's aristocratic features.' Can you explain the aristocratic features, and the relationship with capital flows? If you want to forecast the future for that relationship, feel free to do so. But anyway, aristocratic features coming from international capital flows and the political consequences, which we're all now living with.

Helen Thompson: This is a pretty big question. I think that one way of getting a hook into it, so to speak, is to think about the 1920s and then to think about what Keynes in particular wanted to do at Bretton Woods. And then think about how the Bretton Woods system unravelled, and what the consequences of that were for democratic politics in western countries by the 1980s.

If you go back to the 1920s, certainly by the time in which the gold standard was resurrected, I think you can see that there were a number of problems that open international capital flows posed in political

> “... in a world of companies like Amazon and Starbucks, the way in which the financial side of the international economy is constructed makes it very difficult for individual governments to tax those corporations in the way in which they might want to.”

conditions of universal franchise. And in some ways, I think you can see that most clearly through what happened in Britain. If you take Britain in the second half of the 1920s, constrained by the gold standard and the fact that Sterling had gone back at the pre-war parity, you get someone like Keynes saying, look, we've got a problem here.

Because, essentially, we're assuming that the real economy, the productive economy can adjust to the restoration of the gold standard by doing what it did in pre-universal franchise democratic politics, which is to allow wages to fall down. But that isn't possible under conditions of full franchise representative democracy, he said. He used the phrase 'wages are sticky.'

If you look at what happened in Britain, after the general strike in 1926, although the miners whose strike action was a prelude to the general strike were defeated and went back on lower wages, there was no attempt by the then conservative government to try to push wages down across the board because they understood the political difficulties of that. We can already see there was a relationship between the position of labour in relation to an open international economy where capital flows were concerned, and that international order itself. If you then look on the monetary side, you can see in Britain's case that British monetary policy was very constrained by what the Federal Reserve Board did. Even someone like Churchill was sent into near despair when he understood that dynamic. And obviously, that issue came to a crisis for Britain in 1931, that led in the end to Britain's exit from gold.

I think that what you can see from the 1920s is a growing awareness amongst those who were thinking most seriously about the relationship between the international financial monetary side of things and the democratic politics, that there was very considerable potential for instability. Even before the Second World War, if we keep with Britain, there was a realisation that there had to be some kind of democratic political control over monetary policy. That if that weren't the case, it would risk political stability. In 1932, it was the (US) treasury that started to decide interest rates in Britain rather than the Bank of England. I think that was a more important watershed than the later nationalisation of the Bank of England.

The insight that Keynes took into the Bretton Woods negotiations, was that there had to be some protections for democratic politics from open international capital flows, particularly short-term flows. That is why he thought that capital controls had to be a permanent feature of the post-war world. We now know that that broke down in the 1970s.

If we just track back again for a moment, back to the 1920s. The other issue, which I don't think was one that Keynes thought about in quite the same way, but I think is clearly there, is the issue of the ability of very rich people to protect their capital from taxation. At the beginning of the 1920s you see governments in Europe, particularly in France, who want to maintain the First World War high tax regime and take it into the peacetime world. And by the end of the 1920s, they found that if they put those kinds of taxes on rich people, that they can simply move their money abroad. We see something that looks like the beginning of tax havens. The sense that actually democratic politics, in terms of its ability to tax people, particularly the rich, is constrained by open international capital flows.

If we skip on to the 1970s, after the end of the Bretton Woods system and the return to financial liberalisation, Keynes doesn't really look vindicated. Western democracies have some pretty choppy times through the 1970s and the 1980s, but they endure. There's not a deep democratic crisis in the sense of causing these democracies to be terminated in one way or another, like what happened during the interwar years.

By the time we get to the middle of the 1980s, we can see the same dynamics are nonetheless causing damage to democratic politics and making it harder for governments to be responsive to the demands of labour. And indeed, governments have, in some sense, taken the opportunity of these new international financial conditions to weaken labour's bargaining power pretty seriously.

By the time that we get into the 2000s, in a world of companies like Amazon and Starbucks, the way in which the financial side of the international economy is constructed makes it very difficult for individual governments to tax those corporations in the way in which they might want to. And through all this, there isn't any way I think in which democratic politics or democracies can really be reformed internally to change any of this. Even if centre-left governments are elected that would like to be more redistributive, quite quickly they find that the financial markets constrain their options. In one sense, that's the big lesson that everybody in Europe took from what happened to François Mitterand in the first two years of his presidency. I think the ways in which it became more difficult to pursue mid-twentieth century social democratic politics became part of the return of the aristocratic excess problem in democratic politics.

RN: I think that's a wonderful summary, because not many people focus on the role of capital flows in doing this. The chronology for the United Kingdom is we subject ourselves to an open capital account in 1979. Then it's a Labour government that allows an independent central bank in 1997. We'll come on to what this means in the Eurozone in a minute.

But, generally speaking, is your opinion that these two decisions will be reversed? That we will see less independent central banking? That we will see restrictions on the flow of capital controls? Because the aristocratic features of our current system have to be reversed, if we just focus on inequality as one of the repercussions of that. Is the way forwards some form of reversal of these two major decisions which, as you just said, restricted the ability of governments to deliver for labour?

HT: I'm not so sure about this. I think that it's actually become pretty difficult to undo aristocratic excess dynamics in representative democracies. I think one way of looking at that is through the issue of debt. In the past, you'd say that aristocratic excess would lead in one form or another, to either debt cancellation or at least very much lowering the costs of servicing debt. In a way, I guess you could argue that the second of those is what quantitative easing did over the last more than a decade now. That it was a form of financial repression perhaps.

On the other hand, I think the very fact that quantitative easing proved necessary or appeared to prove necessary, reflects the fact that there was so much debt in the world. So much of that debt was internationalised. So much of that debt was bound up with international financial markets and internationalised banking. That actually retreating from that world of open international capital flows became extraordinarily difficult, if not impossible. I don't have a really clear set of thoughts about this yet.

But my instinct is that, actually, we should understand the monetary turn post 2008 as an alternative way of trying to deal with the underlying problem where the old way of doing it is no longer possible. Having said that, it is also the case that quantitative easing itself, because of the elevated role it gives to central banks in a whole range of macroeconomic decision-making, becomes a frame for all macroeconomic decision-making. And because the outcomes of quantitative easing fuel wealth inequality, the method by which we're then dealing with the problem actually also reinforces the problem.

RN: This issue of financial repression, which for those who don't know, is a way in which interest rates are held low while inflation is high. There's about 90 minutes more we can say about it but that's the simplistic approach to it. It's not yet been achieved without capital controls. If we're going to financial repression, the odds of capital controls go up or is there a new way of achieving this repression without some sort of restriction on the free movement of capital?

HT: I'm interested to know what you think here. But I find it very hard to see that we're going to return to restrictions on capital flows without some kind of collapse occurring first.

RN: The more surreptitious way of doing it is that if I was running the British economy, I could mandate that savings institutions only own British government bonds. That wouldn't, strictly speaking, be a capital control. But as it interferes with the free movement of capital will be a step in that direction. Maybe there's a halfway house that may already be underway. If we look at Europe, it's fairly clear that certain European savings institutions are being forced to buy their own government bonds or other Euro members. Maybe we're on that path to repression that has already got something of the form of capital controls.

HT: There was clearly some ways in which what went on during the Eurozone crisis 2011/2012 involved quite a lot of such incentives for banks to buy the debt of their own sovereigns. Albeit sometimes buying off the European Central Bank. That, I think you can definitely see in the Eurozone. The only hesitation I would then

have is whether that reflects the particular problems the Eurozone create in essentially having a currency union amongst what are still, politically, nation states. And whether that incentive is generalisable out of the Eurozone.

RN: That's where I wanted to come next. Because, as you said at the beginning, governments, and independent central bankers, have subjected themselves to international capital flows. But the Europeans have taken a step beyond that in attempting to subject 19 countries within the Eurozone to this new central bank, the European Central Bank. I wanted to read something on the Euro which you've written in your book:

'A decade after the Eurozone crisis, the EU remained what it had been before the crisis, a multi-currency union, with stronger EU than Eurozone institutions. The explanation for this outcome is the reality that there was no available political resolution. Muddling through proved the decisive response because it was much less difficult than pursuing remedies. Most people just talk about the single currency as if it's a fact.' It's interesting that you describe it as a multi-currency union. Perhaps you could explain that. And maybe, if you want, say what it means now that we have this geopolitical change in the world that Europe is stuck with a multicurrency Europe union rather than a single-currency union.

HT: This is obviously quite a long and complicated question. But if you go back to the 1990s and the beginning of monetary union within the European Union, you can see that the only outlier at the beginning was supposed to be Britain. Britain got itself a legal opt-out from monetary union in the Maastricht Treaty. But even there, if you look at John Major's decision-making at the time, he still thought there was a path to take Britain into monetary union. He needed time. I think it's reasonable to say, with a caveat that I'll come to in a moment, that there was a hope that the European Union could be a single-currency European Union.

The caveat would have to be that there was obviously considerable resistance in Germany, centred on the Bundesbank, to the idea that Germany was going to be in a currency union with some of the southern European countries, particularly Italy. I think there's a tension in the existence of the monetary union within the European Union from the beginning.

On the one hand, there is a clear aspiration in the idea that it should be single European Union, a single currency. And deep scepticism, particularly in Germany as to whether that was viable or not economically. Then I think what you see through the period from 1992 through to the rest of the decade is that the German concerns get blown aside. In significant part because of Germany's own difficulties in meeting the Maastricht convergence criteria for participating in monetary union, so Germany's not in a position to be that strict an enforcer of the rules.

On the other side, the British position not only hardens into, we're staying out of monetary union. But then some other outliers join the club, so to speak. First of all, when the Danes vote down Maastricht Treaty in 1992 and then when Sweden doesn't vote to join monetary union. So, Denmark ends up with a legal opt-out and Sweden ends up with a de facto opt-out.

If you then move on to the new countries that came in 2004, that poses another set of difficulties because it looks quite a stretch for some of them to join the monetary union with any alacrity. Nonetheless, it's then the Eurozone crisis that drives a big demarcation between the late accession countries, if we can call them. The Baltics end up joining. But Poland and Hungary move on to a path that's much further away from any prospect of entry.

If you then look at what happened at the point of the Brexit referendum, you can see people who think this is the opportunity really to force the issue and say, look, we're supposed to have a single currency for the European Union. Now with the British going, we've got the chance to sort this out. Macron wanted to use that as a means essentially of saying to the countries like Poland and Hungary either you join up or you're out. You're into a second tier. But none of that comes to pass. I would say that in some ways the revealing decision is the decision that Merkel makes in 2020 when she agrees to the EU recovery fund. Because she finally says, okay, we'll have some common European debt. But she makes it common EU debt and not common Eurozone debt. And by then doing that, she tangles up the non-Eurozone members into the very Eurozone reforms that Macron has been pushing for rather vainly since 2017. At that point it becomes difficult to start disentangling, saying we're going to have monetary union as the core of the European Union, and then these other states round the outside.

From that point, it's like an acceptance of the fact that resolving the tension between non-members and the members is gone as a possibility. Brexit was the opportunity to rectify that in terms of turning it away from a multi-currency union, because Britain was the most significant non-Euro member. If Brexit couldn't be turned into that opportunity, I think it's quite difficult to see where the next opportunity for resolving that is coming from. Particularly if you look at the way now, I would say in which Poland's position in the European Union in terms of political influence, has strengthened considerably as a result of the Ukrainian crisis.

RN: Your book is very clear that this lacuna of power at the centre forces more power upon the ECB. And to quote, 'has led to overt political interventions by the ECB.' Most notably in 2011 in Greece, 2015 in Greece and the destruction of the Berlusconi government. Let's just say the ECB played a rather large role in all of those. These things were necessary because it's not a unitary, political or fiscal state. We have another Italian election coming up next year, I'm sure you're aware of that. If we put the La Liga, the Brothers of Italy and Forza Italia together, they're polling 40 per cent of the vote, which in the history of Italy does suggest that they're probably heading for power. As you've just said that this post-Brexit opportunity to centralise things or to tighten things has passed. Are we due another confrontation with the ECB once again being the only political force to discipline a government of Italy which it's not committed to leaving the Euro or the European Union, but it's committed, as was the Le Pen candidacy, to making Italian laws supreme over European law, which is tantamount to the same thing. Is the ECB going to be back in the frontline of overt political intervention sometime in the next 12 months?

HT: I think that Italy is such an important part of the story of what's happened to democracies over the last decade, and particularly, Eurozone democracies. I think if we look at the sequence of events since 2011, although, I would say it has a prehistory in the 1990s, but if we stick with what happened from 2011, we have that intervention from the ECB that sets in motion the end of Berlusconi's premiership. Then we see a pattern in Italian politics where they have a general election every five years and some coalition is cobbled together, more often than not involving either a technocratic prime minister and/or a technocratic finance minister, regardless of the parties that have actually won the election. And then that doesn't last, and something more explicitly technocratic comes in its place. Obviously, that's what we've got in spades in some sense at the moment with Mario Draghi. It's government in Italy.

I think that part of the tacit politics of that is essentially that if Italy is going to receive support for its debt from the European Central Bank, there has to be a government, at the very least, a prime minister and a finance minister that is acceptable to the European Central Bank, and implicitly, I think, acceptable to the German government as well. I think it's pretty easy to see the same kind of dynamic playing out after the next Italian general election, as did the previous one.I would be surprised if we see anything that is as overt as the ECB's intervention in 2011 was. But I think that the necessity of an Italian government having ECB support is now the tacit rule of Italian politics. It must be observed in one way or another.

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> ... because the outcomes of quantitative easing fuel wealth inequality, the method by which we're then dealing with the problem actually also reinforces the problem.
> "

RN: Another remarkable part of your book is swap lines. That's a sentence I thought I'd never use. But so many people in my own industry, economists, historians, don't even mention swap lines. But I think they are really important as to how the world works. And you deal with it. I wanted to read another part of your book on this issue and let you explain the consequences, which I think most people don't really understand.

'Only on 9th August 2007 did the mechanisms of the entire complex funding system in which banks depended dramatically break down. From that day, international monetary and financial systems cease to function without systemic support from the American Central Bank.' Since then, every time we have a crisis, huge swap lines go out from the US Federal Reserve. I'd like you to comment on that. In the context of every question I'm asking you having about a one-hour answer you're doing very well at keeping them so short. Also, what that means for the dollar standard in a world where, potentially, according to Janet Yellen, we're heading back to a bipolar world. Are these swap lines the ties that bind everybody back into the US?

HT: As you've said already, it's very clear that at

certain crisis moments after 2007/2008, these swap lines are really consequential, when they are there and when they're not there. To give some examples. There isn't a way out for the Eurozone of the problems it faced in 2011 without the dollar swap lines that the Federal Reserve supplied.

If you track the relationship between the problems that the southern European countries had with the bond spread, and the amount of dollar swaps that the Federal Reserve were providing to the European Central Bank to provide to North European banks, they're pretty strongly related to each other. I think that is not a coincidence.

I think it's important to see the Federal Reserve board's willingness to provide swaps as a necessary condition of the Eurozone countries managing the crisis well into the 2010s, and not just what happened in 2007/2008. Also, the fact that in making decisions about whether to provide those dollar swaps, the Fed was playing a de facto geopolitical role.

Then there's a big question about China. When I was writing the third chapter of the economic part of the book, and I was having some issues about how to structure the narrative. I was doing the China part, which I'd decided to frame around China's strength and China's weaknesses being a part of, in some sense, the burden of the world economy in the 2010s. I remember thinking, well, the real question is, is in the moment of crisis the Federal Reserve going to provide a dollar swap to China? Then the pandemic started, and in the financial crisis in March 2020, this issue really does come up. It wasn't just this abstract. What happens in that crisis, does the Fed help China or not? It was a real question. And the answer, of course, was fudged. It wasn't a swap line. But it was a mechanism that could do the same thing or something of the same thing if necessary. I think it was a really interesting moment because it means that, actually, whilst there was so many dynamics in play that were yanking the US and China apart – this is obviously still the Trump presidency, things were getting more confrontational about Hong Kong – there was something else that was actually pulling in the cooperation direction. That suggested to me that the level of financial integration in the world economy, at least amongst the big economies, was such that, actually, there wasn't really any alternative to that.

RN: The world has marched on since 2020. You'll be aware of Janet Yellen's incredible speech at the Atlantic Council on the 13th April 2022 on friend-shoring. Christine Lambrecht made a speech in March 2022 talking about Germany only doing trade and business with people who share Germany's values. One of the themes of your book is that Europe has been internally split from America in terms of energy politics. Putin's invasion of Ukraine, has it changed everything? Has it widened or narrowed the gap within Europe on energy politics? I know that Janet Yellen can refer to friend-shoring and Christine Lambrecht can talk about values. Is this problem now solved? Is Germany now back under the control of the United States of America? You point out in the book, Americans were quite worried that Germany, or Mrs Merkel, spent more time talking to the Russians and the Chinese sometimes than the Americans. Once again, how on earth do you answer that in a short period of time? If you were writing another chapter post the events of Ukraine, would you now say that, actually, Europe is back under the control of the US?

HT: I think this is still a really open question. I would say that there's a lot of talk of this friend-shoring and values, and I'm generally quite sceptical about that. I'd say that on the financial side, that moment in March 2020 has some continuity in other areas on the financial side. I think it's just completely unrealistic of anybody to think that western countries, where energy is concerned, can say, okay, we're just dealing with friends here. Quite simply, there's just not enough democracies in the world that produce enough energy. I know the United States is in a different position because it's also a big domestic producer. It's pick your poison. It certainly is for European countries.

Now this issue then of what the war has done to Europe, I think there are multiple things that have gone on. The first of them is that a worldview in Berlin and Paris has shattered. And a worldview in Warsaw, to put it schematically, has been vindicated. That Russia is a threat to the independence of the independent nation states that sit between Germany and Russia. And B, that energy is a weapon that Putin was using and continues to use to undermine the security of those states, and to divide European countries from each other. In that sense, I think there's no return to the world as it was prior to the 24th February. Macron will never be able to make a speech again, I think in which he suggests that European sovereignty depends upon resetting relations with Russia and talks about Russia as part of European civilisation. Even if he hasn't really changed his mind about that, he can't say that.

RN: One of the things that jumped out, which I missed at the time, was when the first shipment of gas from America arrived in Poland, the Prime Minister or the President of Poland said now we are truly a sovereign independent nation. Which is just a stunning comment. As you say, there are at least two views within Europe, and one of them has been vindicated.

HT: I'm thinking that there is no way back to the

assumptions around it. On the other hand, I would say that there are still difficult, unresolved questions for European countries about how to deal with the energy situation as it pertains to Russia and as it pertains to Ukraine's independence. I think it is unclear at best as to whether European countries can really retreat from the gas relationship with Russia. Obviously, they can start buying more liquid natural gas, including, obviously, American natural gas. But for the Germans to do that, given they've got no liquid natural gas ports, that's going to take at least the time in which the ports are going to be built. Then there's the fact that there's just too much competition already for this supply.

RN: This was clearly a split in Europe, this decision over Russian oil and availability of non-Russian oil. Is this the next schism coming along politically in Europe, the willingness to accept it or the unwillingness to accept it?

HT: I think then it ties back to the question of the war itself. Is it the case that all European countries plus the US signed up to the idea that as a minimum Ukraine should not lose this war? But what does that mean when you translate that from a phrase into specifics? I suspect it still means very different things in Berlin and Paris than it means in Warsaw. There's still a conflict between the different weight that European countries put on Ukraine's independence and the weight that they put on the medium-term prospects of being able to restore some kind of energy relationship with Russia. I think in Germany, you can see the pressure from German industry about gas in particular. To give up Russian gas is to profoundly change the German economy, given the importance of gas to certain German industries, not least obviously, the chemical sector and the importance of those sectors to the German economy.

RN: The schism may come on the terms that Europe tries to force Ukraine to accept in terms of peace with Russia.

HT: I think that is true. But I think then the complication, and this brings the Atlantic issue back into it again, is it's not so clear how much autonomy that the French and the Germans will have in dealing with this. If you go back to what happened after 2014, so after the Crimea annexation, Germany and France did take the initiative, at least on the diplomatic side. I think the military side is more complicated. But on the diplomatic side, France and Germany took the initiative. The Obama administration and David Cameron's government let them. The Minsk accords were the result of that. But there's no way that the Americans and the British, and particularly, obviously, the Americans, are going to again cede the initiative on how to deal with Ukraine's future, to France and Germany. It's not plausible any longer. And aside from anything else, Ukraine has just put up far too much successful resistance. It's become a symbol of something as well. I think then the tension becomes that the energy incentives, particularly for Germany, of trying to hold on to something of that relationship with Russia, particularly where gas is concerned, remain in place. And yet the autonomy that Germany has for dealing with the Ukraine issue, both within the European context and within the NATO context is much, much reduced to what it was after 2014.

RN: I want to finish by mentioning all the things we didn't have time to talk about, which are very important in your book: China, the Middle East and Europe's potential role in the Middle East. The schism between France and Germany on activity in the Middle East. Turkey. But this is good news because it means anybody who wants to discover the answer to these things has to buy your book. *Disorder: Hard Times in the 21st Century*. I think it's essential reading for any investor. I think it's probably essential reading for any citizen who really wants to understand how the world works. I want to thank you for writing it. Thank you for coming on the podcast. Congratulations.

HT: It's been an absolute pleasure Russell.

Library of Mistakes

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IRELAND'S MANY UNMADE FUTURES

What English literature owes to Ireland

ROY FOSTER
CONVERSATIONS WITH TYLER

Interview by Tyler Cowen
Illustration by Vaughan Mossop

Tyler Cowen: Roy Foster is arguably Ireland's greatest historian, some might say ever. I recommend his classic work *Modern Ireland*. He's also written a two-volume biography of Yeats – one of the best biographies written ever, I think–and numerous other books on the history of Ireland and also England. I have many questions about Irish history. If we go back to the seventeenth century and earlier, why is it that the equilibrium ends up that the English are so much more brutal to the Irish than to the Scots?

Roy Foster: That's a very good question. The comparison between Ireland and Scotland and their relative experiences vis-à-vis the powerful neighbour goes on through many centuries, but to the seventeenth century, notably. I think, as in so many other cases, it comes down to religion and *ethnicus*, if I can put it that way: a kind of cultural, ethnic identity.

The Irish were overwhelmingly Catholic. In the global political world of the seventeenth century, that meant being against protestantised England. They were seen as an entry point for continental political influence from Spain and from France, who were at war, effectively, for much of this time with England, and therefore they were ipso facto disloyal. This is in the view of the English. Their first loyalty was to the pope; their ambition was to be an independent, sovereign country – which became stronger and stronger through the nineteenth century.

The Scots, on the other hand, adapted – at least lowland Scotland, which was rich Scotland, adapted to being part of the union. They united with England in the union of Great Britain in 1707. And the Scots made a good thing out of it. Proconsular figures all over the British Empire, so many of them are Scots; look at generals in the British Army, so many of them are Scots.

The Highlands are different. The Highlands have their Catholic identity to a certain extent; they have their poverty. They are exploited in the way that Irish tenants are exploited by absentee landlords. But that's a minority element in Scotland. The majority of Scots do well out of the union with Britain and have done until very recently. I think we may be seeing the end of that era right now.

TC: Adam Smith made the claim in one of his letters

Photograph: Gregory Dalleau

that the Scot elites did poorly out of union because a lot of the positions they would have taken in the home country in essence went to English people. He argued, well, the union is good for the country, bad for the elites. Do you think he was wrong?

RF: I'd take a more nuanced view. I think the elites did a lot better than Adam Smith, for his own purposes, was admitting.

TC: If we look to the seventeenth century, we see England, in particular, being ideologically radicalised along numerous dimensions – including religion, so much open talk of tyrannicide, politically–and Ireland doesn't seem to be. What accounts for that difference?

RF: It's an enormous question, but there are older loyalties in Ireland. The Irish adopt the Stuart, the Jacobite cause; the Irish definitively have adhered to the old faith, to Catholicism. It rules them out from the Cromwellian dispensation, which revolutionises England in such a total way in the 1640s – well, from the 1630s through the 1640s, right through to the Restoration in 1660.

Ireland has a different social basis, really, in many ways: in landowning, in a history of colonisation and dispossession from the Elizabethan period on. But in the seventeenth century, that process of colonisation and dispossession takes a very particular shape of expropriating native landowners in favour of English incomers and of *planting*, as the word went, in a plantation, of Scots and North-of-England people into the northern corner – the northeastern corner – of the island. From that day to this, of course, we've seen the effects of that.

There's radicalisation going on in a different way, if you like, in Ireland, and for different reasons. But it's a radicalisation that essentially expropriates the old Catholic aristocracy, the landowning aristocracy, in Ireland; it reduces them to a tiny minority west of the Shannon in the badlands of Connemara.

“There is a theory that Ireland is used as a laboratory for British government and that they will apply further afield, in India and the Caribbean, models and lessons that they’ve learned in Ireland.”

TC: If we think of the nineteenth century, as you know, I think it’s in 1831 that free universal schooling comes to Ireland. Are there ways in which, in the nineteenth century, Ireland is more modern than Britain?

RF: That’s a very interesting and subtle question. There is a theory that Ireland is used as a laboratory for British government and that they will apply further afield, in India and the Caribbean, models and lessons that they’ve learned in Ireland, which is sometimes referred to as Britain’s oldest or England’s oldest colony.

I have a slight problem with that, because Ireland is a very special kind of colony, if it’s a colony: it’s a metropolitan colony. The original inhabitants remain, one could say, in a far stronger position than in many of the areas of the British Empire, where they are effectively either enslaved or wiped out. But the point is really that what’s happening in Ireland in the eighteenth and nineteenth century is, as I’ve said earlier, a kind of dispossession.

But at the same time, there are elements – and this is true from the Act of Union, which abolishes the old, very elite Irish Parliament in 1800 – there are elements of experimentation in the British government of Ireland which aren’t, I have to say this, entirely malign, and you zero in on education. The attempt that was being made in the early 1830s was to introduce a nondenominational form of primary education for the Irish people.

Ireland being Ireland, it was rapidly denominationalised: the Catholics used it for their purposes and the Protestants used it for their purposes. But the theory of it was that you had to overcome the religious differences, which by the early nineteenth century seemed to dictate everything that was happening in Ireland. The great novelist William Thackeray, who was married to an Irish woman, said when he did a tour of Ireland and wrote his *Irish Sketch Book*, ‘Where to get at the truth in this country: it is not possible. There are two truths, the Catholic truth and the Protestant truth.’ By the early nineteenth century, this seemed all too true.

TC: Why did popular spoken Irish fade more rapidly than, say, Welsh?

RF: Welsh-speaking continued in the areas that became industrialised and prosperous in nineteenth-century Wales – the areas of the slate quarries, the coal mines. People there spoke Welsh. The areas of Ireland that were comparatively prosperous – and there were much fewer than the areas of Wales into the nineteenth century – were in the East of the island and in the Northeast, where Irish was not spoken and had not been for many, many years. It remained the preserve of the distant western fastnesses: Connemara, the islands off the coast, certain pockets elsewhere. Irish speaking, therefore, became identified – and this is when we get what we call the Celtic Revival from the 1890s – with a pure, prelapsarian view of an unmaterialistic, ancient, almost pre-Christian civilisation, which inspired people like Yeats. But Irish speaking ipso facto was part of that distant time and was not seen as relevant to the modern, go-getting, materialist commercialisation that was affecting much of the rest of the country.

TC: Now, my own field is economics, and it’s striking to me in the nineteenth century how much excellence there is in Irish economics. You have Mountifort Longfield, who maybe first understood supply and demand. John Elliott Cairnes, Richard Whately, Isaac Butt. Why this great flowering of economic thought in Ireland?

RF: I’m so glad you mentioned Isaac Butt, who I think is one of the great neglected figures of Irish history. He founds the Home Rule Party for autonomy within the empire, but before that he is – as you and too few other people know – is a very interesting and intellectually original economist who lectures in economics at Trinity College Dublin and declares at the beginning of one of his first lectures that the great question of economics is ‘Why are the many poor?’ Applying that to Ireland brings him straight into the

thorny thickets – this is the 1830s – of protectionism and landowning. Butt is a radical land reformer in theoretical terms long before the land reform issue galvanises Irish politics in the 1870s and eighties. He is a protectionist for Irish purposes. He becomes, I think, a Home Ruler, somebody who thinks that Ireland must get some form of autonomy back, because of what he sees happen in the famine.

The theory of the Act of Union between Ireland and Britain was that Ireland would be treated as any other part of the United Kingdom. The fact of it – when Irish people starved and died in their hundreds of thousands, and indeed millions, during the Great Potato Famine of the 1840s – the fact of it was that they were not treated as if they were 'any' part of the United Kingdom. They were treated as a special case, and Irish property–landowners, such as it was – were left to take the brunt, which they didn't, in many cases, accept. Butt saw this happening all around him, and it radicalised him as a politician, as well as an economist.

I think, to your larger question: the reason why economics was something that intellectuals turned to in nineteenth-century Ireland – and [William] Lecky, the great historian, was also a sophisticated and interrogative economist – was simply that there was that question that Butt kept asking: 'Why are the many poor?' Why was Ireland so poor when it had so many natural advantages? To some people, there's a simple political answer: English domination. But there were intrinsic, infrastructural reasons as well, many of them to do with the way land was used and the way the population was going. These questions had to be answered.

TC: Another very popular question is, how far back can we go to explain why Ireland developed so many first-rate writers and poets? Why is that, in your opinion?

RF: Well, this is something that has preoccupied me more and more. I started life as a straightforward historian and wrote a book about Charles Stewart Parnell, which was a contextual biography. I then wrote another biography of a British politician, Lord Randolph Churchill, the father of Winston. I then wrote my book *Modern Ireland*, which I think you mentioned earlier. But, especially writing *Modern Ireland*, I was fascinated to see how often a radical and questioning discourse emerged through creative and fictional and poetic writings in Ireland.

Then, almost I would say serendipitously, but it was a tragic case, the person–a great mentor of mine, F. S. L. Lyons–who was to write the authorised biography of W. B. Yeats died before he could write it, and the task passed to me. In writing about Yeats, I also had to write about the heft and the power and

> "I think 1886 was probably the last moment when, conceivably, there could have been united Ireland between the increasingly different Northeast and the rest of the island..."

the originality of Irish writing in the English language, which is so notable in the period when Yeats comes to prominence – where you also have Joyce, you have Shaw, you have, slightly later, Beckett. You have a great number of less well-known writers, like George Moore, who I think is a very underrated and experimental novelist of this time. They're using the English language in a completely new way.

Now, part of this – and structuralist critics following the great Russian critic Mikhail Bakhtin would say it's because they're writing in a language that is at the corners of change. There are traditions of a different language, the actual Gaelic Irish language, which you mentioned earlier. There are also uses and changes and mouldings of English that happen in the island of Ireland which you don't get outside.

You still will get this. I had an aged Volvo once, and I was on holiday in Ireland in the summer, as I usually am, and the boot – which you call the trunk–jammed. I went into the local garage man in my Kerry village and said, 'I suppose I should take it to a Volvo dealer.' He lifted up a monkey wrench and hit the back of the car where the boot was jammed with a great belt. As he hit it, and it did spring open, he said, 'In matters like this, Volvo dealers wield no special magic.' I thought at the time that could be something that Yeats could have heard, or Lady Gregory collecting sayings of the people travelling in the West of Ireland. There is an original twist to the English language in Ireland which is unique.

As I wrote about this more, and I wrote another book called *Words Alone: Yeats and His Inheritances*,

I felt that, looking back through the nineteenth century and into the late eighteenth century, the time when the Irish language begins to spectacularly decline and English takes over, the novelists of the early nineteenth century – Lady Morgan, that's Sydney Owenson, William Carleton, Sheridan Le Fanu, many others – who used to be seen as rather crude and farouche and slightly-rough-around-the-edges writers, now look to us, looking back through Beckett and Flann O'Brien and other experimentalists, as far more subtle, sophisticated, intentionally destabilising writers of the English language than they used to be accepted for. I think critical opinion would agree with me in this. Why this is, is something to do with the decline of Irish and the way it seeps and filters into the way English is used. Part of it is to do with the way that the English language is often a medium which Irish people in the nineteenth century use to conceal the truth or evade uncomfortable conclusions when they're dealing with land agents or police or bailiffs. Or the army, when it comes to that. Part of it is the oral tradition of storytelling and using slightly idiosyncratic but vivid turns of phrase – like car dealers 'wielding no special magic.'

TC: Why did Frederick Douglass visit Ireland and then spend six months there?

RF: Douglass's trip to Ireland is something people are looking at more and more now because there are so many perceived parallels between the position of the native Irish and other oppressed or excluded elements in different cultures, such as the Native Americans and, of course, Black people in the antebellum and indeed postbellum states of America. I think myself that historical parallels and historical precedents can be used as rather a blunt instrument. But certainly, there was a feeling among radical politicians, nationalist politicians in Ireland and Black politicians in the United States that they had a certain common cause. There's also the overwhelming fact – and this, I think, is very relevant to Douglass – that the great leader of Catholic Ireland who brought about the so-called emancipation of Catholics – when they were finally allowed to sit in Parliament, in 1829 – this great leader, Daniel O'Connell, was a very passionate anti-slaver and abolitionist. And many of the people in his Catholic movement and then his movement to repeal the union with Britain and Ireland felt the same way. He was a great radical in the cosmic sense of radical politics, Daniel O'Connell, as well as being a founder of Catholic freedoms and an avatar of national autonomy.

TC: What do you think Douglass learned in Ireland?

RF: I suspect that Douglass, who was a subtle and clever politician, learned that the parallels between what seemed to be the oppression of the native Irish and the very real oppression of Blacks in the United States were not exactly commensurate to each other. The extent to which he absolutely noted that isn't proven, but I feel that – and here I'm chancing my arm, rather – that anyone as analytical as he would have seen that what Irish natives suffered under in mid-nineteenth - century Ireland, it was nothing like what Black slaves suffered under in mid-nineteenth-century America.

TC: Now, my last name is Cowen, and I'm Irish-American. Can you tell me anything about Cowens and Irish history?

RF: Tyler, I'm going to have to pass on that one, I'm afraid. I'll send you to the genealogical office in the National Library of Ireland, where they will tell you everything they can about Cowens.

TC: Sure. Now, you grew up in Waterford, correct?

RF: Yes.

TC: How do you think that influenced your subsequent views on Irish history? The Waterford background — not from Dublin...

RF: Not from Dublin. And neither of my parents were from Waterford, either. One came from the border county: my father came from County Cavan. My mother came from County Wicklow, very beautiful county south of Dublin. But the school that they taught in and where I was taught was a Quaker school. We weren't Quakers – we were nominally Church of Ireland – but very many of our friends were Quakers, and Waterford was a strong centre of the small but disproportionately influential Quaker presence in Ireland. The older I get the more I admire what Quakers stood for, what they did, what Quaker values are; and the more I am conscious that those values infused thevery impressive education that I was lucky enough to be exposed to. You asked for Waterford and I give you Quakers. But Quakers were an intrinsic part of the history of Waterford, and I was brought up at the centre of that.

TC: You think your views on religious toleration and the history of religion in Ireland were shaped by that background?

RF: I think they couldn't not have been. Quakers had been dissenting Protestants in the late eighteenth and nineteenth centuries. They had been rather discriminated against by the established Church of Ireland, one would have to say the Anglican Church of Ireland. Therefore, they felt–I think–more at one

with the Catholic majority of the island. Anyway, that squared with the Quaker beliefs in equality, which go back to Charles Fox and beyond. I think if you take a Quaker view of Irish history, you will have a more intrinsically sympathetic view to the varieties of religious experience that exist in Ireland than you would if you were either coming from a hard-line Church of Ireland background or a devoutly Catholic background. Quakers sit rather attractively, to me, in a middle territory, and a territory that doesn't privilege privilege, if I can put it that way.

TC: If we think of Ireland in the mid-to-late nineteenth century, do you think there was a path where British union with Ireland persists, is at least moderately liberal, and is permanent? Does that involve earlier home rule? Or giving Catholics access to the spoils system? Was it ever on the table? Was it just fantasy?

RF: There are two great missed chances. One is when the Act of Union happened in 1800–1801 and did away with the old Irish Parliament. This was later seen as a great injustice, but it should be remembered that that old Irish Parliament was a very elite Protestant monopoly. Implicitly part of the promise to the Irish for doing away with their Parliament was that Catholics would be, in the phrase of the day, *emancipated* and be allowed to sit in British Parliament and have access to the great offices of state.

Thanks to the opposition of King George III, this was ruled out, and Catholics felt very reasonably that they had been misled and cheated. It took nearly 30 years, till 1829, under Daniel O'Connell, as I've mentioned, for that injustice to be rectified. There's a very good recent book about it by Antonia Fraser. This, I think, was a missed chance for reconciliation. Those 29 years between the union of 1800 and Catholic emancipation of 1829 were suffused with bitterness, which need not have been the case.

The other great missed chance is in 1886, when Gladstone converted himself and a large part of his ruling Liberal Party in Britain to the cause of Irish home rule. In the greatest speech of his life, for nearly, I think, two and a half hours, he tried to persuade the House of Commons that if they rejected giving Ireland an autonomous parliament within the empire, indeed within the United Kingdom, they would regret it in the future and it would be a very ominous sign. They did reject it, the House of Commons. They passed it a few years later, but it was rejected by the House of Lords. I think 1886 was probably the last moment when, conceivably, there could have been united Ireland between the increasingly different Northeast and the rest of the island, with an autonomous parliament on the Canadian model within the empire, which I suspect would have disengaged itself over the next 50 years by peaceful steps, as indeed the Irish Free State after the Irish revolution disengaged itself from the Commonwealth by peaceful steps. But by then Ireland was partitioned, which to me is an inevitable tragedy but still a tragedy. And that could just about have been averted had Britain given Ireland home rule in 1886.

TC: How contingent was that partition in the 1920s? Is there a scenario where there's an attempt to make all of Ireland independent that is anything other than just a very bloody civil war?

RF: No. I think certainly by the early 1920s, that's the case. I think the First World War, which is one of the defining events in Irish history, split a deeper rift than ever between the Northeast and the rest of the country. Mind you, very, very many – more than 100,000 – Irish men volunteered to fight on the side of the Allies in the First World War, but the real commitment came from the Northeast, the Protestant culture of the Northeast, which was determined to use the war effort as a way of showing that they were part of Britain, not part of a putative home-rule Ireland.

The Battle of the Somme, which decimated the flower of Ulster's youth on the western front, put this into stone, just as the 1916 nationalist rising a few weeks before, at Easter 1916, and the executions of all the leaders of that, built into stone the resentment of the nationalist Irish against British rule, leading to the extremely traumatic guerrilla war of independence and then the civil war which followed.

TC: So, you also think the periodic Second World War talk of Ireland giving up its neutrality in return for unification – that was never serious, in your view?

RF: No, I think it was Churchill with one too many drinks in him, frankly.

TC: If we look at the economic history of Ireland from, say, the Republic, 1920 through the 1970s, it seems there's some bad trade policies, the economic gap with Britain widens, there's not that much industrialisation. What went wrong during that era in terms of policy, or culture, or whatever?

RF: Well, I think [Eamon] de Valera, the leader of independent Ireland from 1932–3, took protectionism to its limit. There was a trade war, an economic war with Britain, over the disagreement about outstanding payments for land reform. Incidentally, Tyler, as an economist, I think we've got to mention the extraordinary achievement of land reform in Ireland. When I went to live in England in the 1970s, I was amazed at how feudal the English land system was: the size of huge estates, the fact people in villages in Norfolk and Dorset didn't own their own

> Too much emphasis is put, perhaps, on de Valera's correctness in going to pay his respects on the death of Hitler at the German embassy – or the German legation, as it was – in Dublin at the end of the war.

properties. This was so different from Ireland, where, thanks to the Land Acts from 1881 right through to 1909, with a great deal of government money, the Irish occupying tenantry were enabled to buy out their own holdings from the landlords, who were given enormous sweetener payments by the British government. This is one of the Irish revolutions that is less often mentioned. It created a very solid, conservative, small-property-owning rural petite bourgeoisie. In that one fact, in that one sentence, you have a large explanation for why the Irish revolution, when it did come, was politically radical in some ways but socially very conservative.

You also have the reason for the, I have to use the word, backwardness or conservatism of Irish farming in the 1920s, thirties, forties, fifties and sixties. It was the small family farm and the absolute determination of the landholder to hold onto what he, or, more rarely, she, had fought in the land war of 1879–81 to get hold of. The stem system of inheritance, the ruthless emigration of redundant siblings to leave one inheritor for the farm – all this led to a fairly stagnant agricultural economy. There was also a stagnant industrial economy for much of the twentieth century, until the 1950s, when a very brilliant civil servant called T. K. Whitaker brought in a whole new schedule of economically liberalising measures and began to invite external investment into Ireland and set up an industrial development authority to work on Ireland's resources. It did have resources. I'm not talking about turf in the bogs and endless winds to drive electricity, although this has now come to be the case. I'm really talking about the existence of a highly educated and quite disciplined and intelligent workforce, because Irish education has always punched above its weight. We've seen this in the years of the so-called Celtic Tiger as well.

From the 1950s, sixties and seventies, the Irish economy did expand in a way that it had never done under the years of de Valera, and you as an economist will know this, partly because I think the general tendency began to be to look outwards and welcome influences coming in from the outside world. Whereas de Valera had – and this goes back to the years of the Celtic Revival, in which he was immersed – de Valera had a vision of Ireland which was inward-looking, which was purist, which was anti-materialist, which was not going – he said this frequently in speeches – to privilege the creation of wealth and material comfort if it meant losing the essentials of what he conceived of as Irish identity.

TC: If we think about the Troubles, they seem to heat up again in the late 1960s. Why does that happen at that time?

RF: Well, many books are published about this. The most recent ones have started emphasising the examples of global movements, of civil and libertarian unrest, notably in America, on a generation that had been educated to know how discriminated against the Catholic people were. I think there's a question as to whether the outburst of violence that began in 1968–9 – and then continued, as you know, until the Good Friday Agreement of 1998 – there's a question as to whether this was the bursting of a boil, which was always going to happen because of the way the Catholics in the northeastern counties – the statelet set up by the Anglo-Irish Treaty in 1921 – that this was always going to happen.

More recently there's a more nuanced view that sees movements towards reconciliation, movements towards peaceful civil rights demands, movements towards liberalisation within a certain wing of the unionist party – that sees this as happening in the early and mid-1960s. And all that followed as a lurch into violence that could have been avoided, had the unionist establishment behaved with more intelligence and foresight.

I think I incline rather to that view, and I believe that it was the view of Seamus Heaney as well, about whom my latest book is. Certainly, when you read about his life and those of his peers in mid-1960s Northern Ireland, you get a sense of: finally, some new territories of interaction, cultural interaction,

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social interaction between the two communities opening up. But due to the violence with which civil rights demonstrations were put down in 1969 and due to the rise of the Provisional IRA as a result of that, that was not to be, and we had 30 years and 3,500 deaths instead.

TC: Why did the British intervene as much as they did — because that had not been the general pattern?

RF: No, absolutely not. One of the first pieces of crusading journalism that drew attention to the way Northern Ireland was run, and gerrymandering and discrimination and all the rest of it, was in the British *Sunday Times*, which was then, amazingly, quite a crusading paper, which it no longer is. The article was called John Bull's Political Slum. And it was a political slum. And one reason it was a political slum, Northern Ireland, was that the British threw money at it when demanded by the unionists but kept their faces firmly averted from the kind of culture of discrimination that had been built upon and encouraged ever since the measures like the abolition of proportional representation in voting, right back at the beginning in the 1920s. When they did intervene, it was, I believe, reluctantly.

There's a simple nationalist version, which is that they were determined – the British were determined–to hang onto Northern Ireland for military reasons no matter what, and that's why they poured the army in. Absolutely unproven, and I think proven to be untrue by the recollections and the evidence that's come to light since. Northern Ireland was never going to be anything but a running sore for the British, and many of them secretly and covertly would have really done their utmost to wash their hands of it, as indeed they may almost unintentionally be doing now because of the nonsensical position in which the catastrophe of Brexit has put Northern Ireland in relation to the larger island and in relation to the Republic.

TC: How much permanent cultural influence do you think it had that the Republic did not fight in the Second World War?

RF: Again, a very incisive and interesting question. Many Irish men did sign up to fight for the Allies. Many Irish women went over and worked as nurses and doctors in British hospitals during the war. In my wife's family, that's very true. In my own family, four of my uncles fought for the Allies. But when they came back after 1945 to Ireland, they were not welcome. Certainly, they were not welcome to talk about their experiences. There was a kind of doublethink in that – I think the vast majority of Irish people were engaged in what might be called a pro-Allied neutrality. Certainly, Allied airmen who were shot down over Ireland, for instance, during the war, if they were from the Allied side, were quietly repatriated to Britain. If they were Germans, they were interned. There was a different approach.

Too much emphasis is put, perhaps, on de Valera's correctness in going to pay his respects on the death

of Hitler at the German embassy – or the German legation, as it was – in Dublin at the end of the war. You can't really read from that that he was essentially pro-Nazi, though some Irish republicans certainly were. He simply felt that as a head of state, he was doing exactly what he should do when another head of state died, in whatever circumstances. But this is often raked up against Ireland, implying that Ireland was pro-German during the Second World War. It wasn't, by any means, but preserving a position of neutrality was, I think, probably politically inevitable for de Valera. I think one interesting fact is that so very few politicians in Ireland from the opposition's side ever queried it. I can only think of one, James Dillon, the Fine Gael leader, who was very much antineutrality and believed that Ireland should have entered on the side of the British. It was, I think, as I've said, a pro-British neutrality, but a neutrality nonetheless.

It's one of those subjects in Irish history which has recently been coming into focus – and the histories and the treatment of those people who did volunteer to fight on behalf of the Allies and came back to a cold welcome. Or, if they were soldiers from the Irish Army who'd gone to fight for Britain, they were actually disciplined when they came back. This is now coming under view, and a number of very interesting studies have been written about it. It's one of those many issues in Irish history, like the abuse of children and women in the so-called industrial homes run by the Catholic Church. It's one of those no-go areas that is very recently coming under examination by a new generation of, I think, very impressive Irish historians.

TC: After the war, the Republic switches its electoral system to a version of the single transferable vote. Why did they do that, and how has it mattered for Irish politics?

RF: It's mattered because it has encouraged, as STV PR systems (single transferable vote, proportional representation) do all over the world, a likelihood towards coalition governments, often between unlikely allies. I think this is a good thing. Living in Britain, where they have what I think is an archaic and crude first-past-the-post system, which has given repeatedly sweeping powers of government to parties who have not received anything like a national majority – I think it's a much less admirable system than what Ireland manipulates. The general line is often taken that it's too difficult for voters, but actually anyone who's at all interested in where their vote is going knows very quickly or finds out very quickly the advantages and disadvantages sometimes of tactical voting in a PR system. The Irish are exceptionally good at it.

The disadvantage might be that it produces a rather clientelist kind of politics, and there's a lot of horse trading and pork barrel, as you would say in the States, politics that go on, especially in rural constituencies, as deals are hammered out for who gets what and what votes go to whom. But in the end, I think it's produced – I think this has to be admitted – a remarkably stable political system in a postrevolutionary country.

When you look at the numbers of revolutionary regimes that were set up in European countries after the First World War – and I think Ireland should be seen as one of those – when you look at what was happening in Central Europe, when you look at the rise of fascism, especially in Italy but also in Germany and to a certain extent in France – Ireland, though it had a miniature parafascist party in the 1930s, kept a stable democratic system going. And it kept it going through the crises of war and poverty and a number of internal crises within the government itself, right through to the present day.

At the moment, we have, again, a coalition government in Ireland between the long-standing enemies, Fianna Fáil and Fine Gael parties, that emerged out of the civil war divide. Which is yet another of those, until recently, rather unexplored areas of Irish history: the traumatic civil war that followed the Anglo-Irish War in 1921. I think the PR system that Ireland adopted has stood it in good stead, and I think that Ireland at the moment seems a far more mature and effective polity, in political terms, certainly than Boris Johnson's England. And I say 'England' advisedly, because I think both Wales and Scotland are in a rather questionable position vis-à-vis the unity of the UK at this moment.

TC: There's so much focus on Joyce and Yeats as writers, but how does Irish modernism differ, in your understanding, if you view it through the lens of the Irish visual arts and painting? Stained glass, sculpture?

RF: This, again, is another area of Irish history that has been reopened with a number of analytical treatments of Irish art, putting it in the mainstream of European modernist art rather than as an interesting variant on the British experience, which was far too often the case in the past. That may be true of, let's say, Irish eighteenth-century landscape painting, but it's emphatically untrue of Irish painters of the *fin de siècle*, great painters like [William] Orpen and [John] Lavery, who are much more like French painters, and also have studied in France in many cases, rather than being variants of the British norm.

You mentioned stained glass, and that of course is with artists like Harry Clarke and Mainie Jellett and Evie Hone. That is another area, a medium in which modernism – and cubism even, in the case

of Evie Hone – finds its way into Irish art at a time when the British are turning away or averting their faces from it.

There's a great crisis – not crisis, a controversy – in Irish art around the early years of the twentieth century when a man called Hugh Lane, a great collector of art, tries to set up a modern gallery in Ireland of impressionist and even early postimpressionist art, and tries to give his great collection to the Irish people to form such a gallery. I can't go into it now, but it becomes a disputed issue when he dies in the *Lusitania*, leaving a disputed will, and the paintings are grabbed by the National Gallery in London where they largely still reside, though a new arrangement for sharing them with Dublin has just been recently worked out. The interesting thing is that Lane and many Irish people had an eye for the new French painting, as did some Scottish collectors, long before they became valuable in the eyes of the English art establishment, so I think there's always been a case for arguing that Irish art looks to Europe in many ways; many Irish artists train in Europe.

An exception, someone who doesn't train in Europe, is perhaps one of the greatest if not the greatest Irish painters of the twentieth century, who is Jack Yeats, brother of W. B. Yeats. There is this absolutely wonderful huge exhibition of his work in the National Gallery in Dublin at the moment, where the radicalism and power and poetry of these very expressionist paintings is just mind-blowing. You can't think of any English painter at the time who's doing anything like it. You can think of [Oskar] Kokoschka, you can think of some of the German expressionists, some of the colourists, and you can see parallels. But it's a very definitively un-British kind of painting.

So that's visual art. We've long been used to the idea of Irish literature existing in a different, a much more international, a much more radical,framework than English writing of the – certainly nineteenth and early twentieth – centuries. But I think an interesting development that's happening now in cultural history and cultural criticism is that Irish visual art is also being seen from this angle as well.

TC: Why is Jack Yeats still so undervalued in international art markets? You can still buy a top one for what, a little more than a million British pounds? If you compare it to prices for, say, continental artists, it could be 10 or 20 million pounds or euros.

RF: A million pounds is still a lot of money, Tyler, in my book. I think he is underestimated. But there is one very practical reason, which is that Jack Yeats didn't prepare his canvases, and they're fragile things. Sometimes when you look inside the glass along the bottom of a Yeats painting, there are flakes of paint that have fallen off. That's a very practical reason for perhaps not hitting the very highest values. But during the boom of the Celtic Tiger, I think a million would have been cheap for a major Jack Yeats. They *were* hitting large prices. And recently they've been hitting them again.

> "Oscar Wilde once wrote to William Yeats, 'We are a nation of brilliant failures, but we are the greatest talkers since the Greeks.' With so much Irish success today, how will that image have to change? Is Ireland culturally prepared to be one of the countries that's doing better than all the other countries?"

I think to compare them – if you're thinking of the tens of millions, you're thinking of Picasso and Matisse, and I think that's a different ball game, really. I think what you're buying with a major Picasso or a Matisse is a statement of a change in the history of art that affects the entire artistic world. I imagine, though I'm by no means an expert, that that's one reason for the astonishing prices that these command – as with, to take a very different example, Andy Warhol. If you're buying a Jack Yeats, you're not buying into a work that has changed the practice and effect and achievement of world art. You're buying something very special and, if you like, idiosyncratic, and I think every bit as beautiful as a Matisse or a Picasso – but that's perhaps a biased opinion.

TC: John Stuart Mill once wrote this in a letter: 'I know tolerably well what Ireland was, but have a very imperfect idea of what Ireland is.' Is that still true? Was it ever true?

RF: It's true of many people. It's interesting you quote Mill, who wrote a wonderful essay called *England and Ireland*, which reflects, I think, that opinion. He also said something which I've often quoted, which I like very much, which is that Ireland is in the mainstream of European history, whereas England is in an eccentric tributary. I think that's very true, and a lot of what we've been saying today seems to me to bear that out, from the seventeenth century on.

What Ireland was, I think, is something that is also, in a sense, up for grabs, where we're trying to re-envision it, we're trying to revise it, we're trying to re-explain it. Something I wrote long ago, which has been quoted once or twice, is that the best history is written when we realise that people acted in terms, in belief of, in expectation of a future that was never going to happen. And I think that's very true of–well, it's true of the histories of most countries, but very true of the history of Ireland.

The expectations in which the revolutionaries acted in 1919–21 were of a future that didn't happen. The expectations of unionists and imperialists in Ireland, of which there were many in the late nineteenth century – they acted in terms of a future that was never going to happen either. We all act in terms of a future that's never going to happen, but that imagined future is what dictates the way in which we behave. I think, in a sense, John Stuart Mill's very honest admission is relevant to that as well.

TC: As you probably know, Oscar Wilde once wrote to William Yeats, 'We are a nation of brilliant failures, but we are the greatest talkers since the Greeks.' With so much Irish success today, how will that image have to change? Is Ireland culturally prepared to be one of the countries that's doing better than all the other countries?

RF: Well, again, if I can instance my own work, I wrote a book called *Luck and the Irish: A Brief History of Change, 1970–2000*, which is a study of how Ireland became rich, successful – a country into which people immigrated rather than exporting its own people for emigration. A country which was producing a large quantity of the world's supply of Viagra, to take one example of its pharmaceutical revolution. A country in which not only Big Pharma but also silicon technology invaded from the 1990s and made a number of people very, very rich. There would be an extreme check applied in the crash of 2006–2008, but now that we can look back from 2022, the upside is still there. Ireland is a great deal richer, more prosperous, more fully populated, and more, I think, optimistic than it was in the Ireland I grew up in in the 1960s and early seventies. I think Ireland has got very used to being a world player, or at least an EU player, if I can put it like that, and that can't be underestimated. I think Ireland began being rich earlier than people think, just as Ireland began being liberal earlier than people think.

People think that Ireland cast off the shackles of overwhelming Catholic power and social morality with the scandals that emerged about bishops having children and the mother and baby homes and so forth. Not so. I think – and I said this in the lectures that became that book, *Luck and the Irish* – I think it began with the Irish women's movement in the very early 1970s, when what the sociologist Tom Inglis has called the bargain, the implicit bargain between the priest and the mother that kept Ireland going, was broken radically from the mother's side. When women were not going to be instructed by the church how to live their lives, and how to live not only their reproductive lives but their social and their work and their sexual lives.

That was an enormous revolution, and it happened both quickly and irrevocably from the 1970s. Similarly, I think Ireland became rich not just when the Big Pharma and the Silicon Valley began invading in the 1990s. It became much richer from 1972–3 when it entered the Common Market, as it was then called, and became the recipient of very many grants and handouts and also, more creatively, was integrated into the European government, always punching above its weight at Strasbourg and Brussels, and doing very well out of it.

Ireland took to Europe in a very committed way. Even during the years of austerity after the crash of 2006–8, when it seemed at the time rather draconian implementations of economic policy were being ordered on Ireland from the so-called troika of European financial authorities, it wasn't objected to half as much as it was in Greece or in Spain, for instance. The medicine was taken because so much good medicine, or sugar, or whatever you like to use metaphorically, had gone down in the previous 20-odd years. Ireland has come through a lot of its economic dislocation since then and is more – I think I'm right to say – passionately and more committedly European than ever, especially in the light of what Brexit is bringing about in the larger island next door.

TC: As Northern Ireland becomes at least as much Catholic as Protestant, does that increase or decrease the chances for a single Ireland?

RF: To say that it would increase them is to perhaps assume too much that people's political vote follows their ethnoreligious identity. It used to be so; it's less so now. I think you get far more middle-class Catholics who will admit to believing in the union now than you ever would have before. You get, on the other side, I think, far more – especially in the younger age cohorts – people from a Protestant

background prepared to envisage a united Ireland. Partly, of course, because the Republic with which they would theoretically be uniting is such a younger, more outward-looking, less priest-ridden, more fashionable, to use the word, entity than the country that their parents or grandparents would have averted their gaze from.

At the same time, I think there's much talk at the moment of a border poll and how it would go – a border poll meaning a vote for reunification. I think intercommunal tensions are so high at the moment in Northern Ireland – and that again brings us back to Brexit or has a lot of its origins in Brexit – that I think it's the wrong time for such a poll. If it narrowly turned out in favour of a united Ireland, I think it would be fairly catastrophic. If it turned out narrowly the other way, it would probably be catastrophic too. I think at the moment things are too finely balanced to push it. I suspect, and here I'm pushing the boat out a bit, that in about 30 years' time the governing opinion in the six counties of Northern Ireland might well have shifted much more towards uniting with a European Republic of Ireland to the south than staying with what will by then be a sadly diminished England. But that's just a personal opinion.

TC: Last question, to close – this is in some ways quite a large one: throughout your entire life, you've taught Irish history to Irish people, to English people, presumably to Europeans, and to Americans. What are the main differences across those groups in terms of how they understand Irish history or how you teach it?

RF: One of my favourite Irish novelists, Elizabeth Bowen, said that she wished the English remembered much more Irish history and the Irish forgot more of it. I tend to feel the same way. If you teach Irish history to Irish people, you can expect a certain parti pris, a certain attitude that is already there that you have to challenge. I should say one of the great things about being an Irish historian is the sophisticated, engaged, passionate interest in history among Irish people. We see it at the moment in the Decade of Commemorations, so-called, commemorating that key decade, 1912–22, when so much changed in Ireland.

Living in England, I've been amazed at how little commemoration there was, let's say, for instance in 1991 of 1691, of the Glorious Revolution, of the moment when Whig culture created essentially the modern British political system. Nobody gave a damn about it or remembered it. I was in France in 1989, and again, the extraordinary level of commemoration about the revolution was something you never see in England, perhaps because England is more secure and perhaps blinkered in its own views of itself and its past.

Moving on to teaching Irish history to English people, British people, I think it's absolutely vital. I've done it in London for many years. I inaugurated the first chair of Irish history in Oxford, which is still there, with a very brilliant successor, I'm glad to say. Teaching English people, especially at the heart of the establishment, which you would have to say Oxford represents, is utterly vital, because these are the people who will be the civil servants and possibly politicians of the future. The astonishing ignorance of English people about Irish history, apart from some set pieces, is one of the things that astonished me when I came, back in 1974, to be an academic in this country. That's the obstacle you have to get over when you're teaching Irish history to English people.

Teaching Irish history to Americans, which I have done a bit, is another question again, because you're encountering the emigrant memory of Ireland in many cases. Irish Americans or people with some Irish blood in them will say 'I'm Irish,' not 'I'm Irish American.' It's a sense of identity which I think societies of emigrants bring very powerfully with them and sustain very powerfully. But it does mean that, all too often, the memory of Ireland is the memory of the grandmother or the grandfather or the generation who emigrated. They've kept it in aspic, and it's necessary to stir that around a bit, to change it, to accentuate the complications, the nuances, the ironies of Irish history, the unexpected futures, and the futures that were expected but never happened, as I mentioned earlier.

That's what you have to try and get across to an audience that thinks they have a kind of historic tapestry, an immobilised tapestry or a mural of great national events, one after the other, leading in the end to liberation. It was all greatly more complicated and more difficult and more interesting and, I think, more creative than that.

TC: It's been a real pleasure. Roy Foster, thank you very much.

RF: Thank you, Tyler. I enjoyed it.

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LYNDON JOHNSON: THE ETERNAL QUESTIONS

An underrated but important president

GEORGE OSBORNE
THE PRESIDENTS & PRIME MINISTERS

Interview by Iain Dale
Illustration by Vaughan Mossop

Iain Dale: George Osborne, former Chancellor of the Exchequer, has written a chapter on Lyndon Baines Johnson in the book, *The Presidents.* You have had a long-standing interest in LBJ, haven't you? Why the fascination?

George Osborne: Well, first of all, thanks for asking me to write the chapter, which I did in lockdown. It was one of my lockdown projects.

ID: Well, it was either you or William Hague. I came to you first and he was going to be second, because I know he's equally fascinated by him.

GO: Any time William Hague's your reserve, it's a good time. He's an interesting President for someone like me to be fascinated with. Primarily because, of course, he's from the liberal US tradition and as a conversative I'm always more traditionally associated with Republicans. But I've always had a great interest in him, as have others like William Hague, and Gordon Brown, and Michael Howard – political contemporaries of mine. Because he poses the central political question, which is when do the ends justify the means? Either in the most extreme examples of wars and invasions and so on. Or in the case of rough-and-tumble political tactics. And Lyndon Johnson is the extreme example of that in the American political sphere. He's gross in his tactics and verging, we would now say, on corrupt. And he's completely Machiavellian. And yet, his presidency has these landmark achievements domestically on civil rights. He's the President who extends voting in the Southern USA to American Blacks. He introduces Medicare, Medicaid, the great public health programs that exist in America today. He extends federal support for education in America. So, he achieves things which all subsequent Democrat Presidents have tried to emulate, including Joe Biden, and yet he does it in the most horrendous way.

So you're forced to ask yourself that question, when do the ends justify the means? I think in his case, domestically, they do. I say domestically, because the other thing that hugely overshadows the Johnson presidency, is the Vietnam War. Which basically breaks him and, arguably, breaks America.

> The question of when do you intervene to defend what you think of as your interests and your values, are the same questions that confronted the Johnson presidency.

I've been in government when we faced questions about intervening in Libya, not intervening in Syria. I was a Member of Parliament when we voted on the Iraq War, as an opposition MP. The question of when do you intervene to defend what you think of as your interests and your values, are the same questions that confronted the Johnson presidency. We all now say, obviously Vietnam was a tragedy. But at the time, they thought they were standing up to communist Russia and Communist China, and they were trying to learn the lessons of Munich. So, I think his presidency throws up all these eternal questions.

ID: You hosted a dinner in Downing Street for Robert Caro, who's written these marvellous biographies. I've got them on my shelves. I've always thought, I'm not going to start them now, I'm going to wait until I retire, if I don't die before I get to read them. Because they are, by all accounts, just the most brilliant books.

GO: Robert Caro, who's very much still with us and still completing his biography of Lyndon Johnson. Caro really used Johnson as a way of writing a story of post-war America. Each volume is many hundreds of pages long, and goes into incredible detail of aspects of Johnson's life. He is the greatest biographer of our age. I had the opportunity, with him coming to Britain, to organise a dinner for him in the Number 11 dining room, which is a very beautiful room, designed by John Soane.

People from the Labour Party, the Liberal Democrats, the Conservatives, were all trying to angle for an invite because there weren't that many seats around the table. We had an absolutely brilliant evening. He's interesting because he's also written a book about the person who built the transport system in New York. It sounds very boring, but it's actually a great book as well, about Robert Moses. There's about to be a play in London about his life.

Again, it's this question of, to get the job done in politics, to create a public healthcare system, to create an urban transport system for New York, what are you prepared to do? And if you only play by the rules, if you're Mr Nicey Nicey, you often don't succeed. One thing I loved from my time in politics – I spent half my time as an MP in opposition and half my time in government – is really delivering, actually getting things to happen rather than talking about them. It is the big challenge in a democracy. It's so easy to write your pamphlet saying, this is what the education system should look like. The thing I found fascinating, although lots of people say it's mind-numbingly boring, and it's bureaucracy, but actually delivering is, to my mind, the great Rubik's Cube you have to solve, and Johnson solves it.

ID: Do you think, with the size of government now, in America or here, that it's much more difficult to pull the levers and get things done than it would have been in the 1960s?

GO: Well, Johnson created the modern federal US government. Before him, there's not really any federal public support for healthcare or education. The criticism levelled at the Johnson period is that it sets up a culture of welfare dependency and entraps poor America in these great entitlement programs. That's the kind of criticism that comes 20, 30 years later in the 1980s and 1990s. I think, at the time, however, as you say, he's building on nothing. He himself, by the way, with the possible exception of Abraham Lincoln, is the poorest person ever to be the President. He grows up in absolute poverty in the Hill Country of Texas, near Austin, where there's nothing. There aren't paved roads, there's no electricity. Without electricity, people have to do backbreaking work all day, both in the home and in the fields. You have to be a pretty harsh person to say this was a terrible expansion of the American state. The truth is he gives the American state a bit of a heart in the 1960s. By the way, just then they begin to afford it because it's becomes the world's richest country.

Take the NHS, which is always a very contentious issue. The NHS has been around for 70-odd years. It has over a million people working in it. You've got 60-odd million people who depend on it, and you're the Health Secretary. It's not enough to say,

I've got my three-point plan to replace the NHS. You've got to fight for it. If you want to make radical change, there is resistance in the system. Some of it is producer interest based, and it's very obstructive. If your plan's good enough, you'll get past that. But if you just throw up your hands and say, ah, I can't deal with this bureaucracy, then I'm afraid you're in the wrong business. You should go and write a newspaper column. I've done that as well. That's quite easy compared with actually delivering the change. Johnson uses all these methods, having been a great senator and a Congressman before that, to do things. No civil rights legislation has passed the US Senate since the US Civil War. Despite all the promises of Abraham Lincoln, no legislation is passed until Johnson is Senate majority leader. He's the person who gets two landmark civil rights acts through the filibusters in the Senate and gets them onto the statute books. People can talk about it. Look at all the problems Biden's having, getting some of his domestic legislation onto the statute book. Look at Obama's presidency, let alone Trump's. It's very hard to get things done and Johnson – there's this great aphorism, your first rule of politics is you've got to learn to count. He goes through every senator, he works out what every senator wants. It may be completely unconnected with the legislation he's trying to pass, and he ticks them all off, he cajoles them, he bullies them, he threatens them, he flatters them, whatever it takes. It's a bit like anyone who's a fan of the West Wing, he is the guy who ticks the votes off on the equivalent of the whiteboard. And that, to me, is a lesson in the fact that it's not enough to talk about something, delivering it is a whole order more difficult.

ID: You mentioned his childhood. Let's go into that in a little bit more detail because from reading your essay, that really influences his later life and his desire to introduce these massive reforms so that people in those kinds of areas didn't experience the poverty that he did.

GO: Yes. He grows up in one of the most isolated communities in early twentieth-century America, which is very poor, hard scrub farming in Texas. He's got absolutely nothing in his life that would suggest he is destined for greatness. And yet, almost from the moment he can speak, he's like, I'm going to be the President. He goes to rural schools no one's ever heard of. He goes to a Southwest Texas teachers' college for his education. This is not Harvard, or Yale, or Westpoint, where people like the Kennedys have been.

What's odd about his life is, he's incredibly arrogant and presumptuous that he is destined to be in charge. And it really rubs up all his contemporaries. Whether he's a college student, or he's at school, or when he becomes a junior congressional aid, he definitely puts people's backs up. And yet, there's also a side to him which he doesn't seem to wear on his sleeve much, which is deeply and passionately on the side of the poorest Americans. Including Black Americans. Which of course, is very unusual for a White poor American of his background. That's his mission. When he's the congressman for the area he grew up in, he's the person who delivers the electricity – by the way, in some corrupt deal which he benefits from. So, the classic question of ends and means. He gets the electricity to the area which otherwise wouldn't have got it.

Then as President, he's always got those people in mind. That's quite remarkable and it does seem to be genuine. When he passes the civil rights legislation, he stands up in Congress, as President addressing both Houses of Congress, after Martin Luther King has faced, and his demonstrators have faced, violence in Selma, Alabama. And he says, we shall overcome. He's the White American President who uses the words of the great civil rights anthem. And there's an enormous applause in Congress and it unlocks years of opposition to civil rights voting legislation which is going to change the politics and power structures in the south. So that's another paradox of his life. The arrogance and the swagger, whilst at the same time, the apparent lack of any racism which would have been expected of someone of his background. And although he ends up making many millions of dollars in various corrupt dealings out of television stations and a company called Brown & Root, which eventually ends up as Halliburton, he's still fighting for the poor guy. That's remarkable too.

ID: How did he first become a congressman?

GO: He spends some time with his parents who are in despair working on a rock-breaking gang building dirt roads through Texas. Again, an extraordinary background for someone who ultimately becomes President. He goes to a teachers' college. In all of these places, by the way, he becomes head of the students, he's already manoeuvring for position. He takes a year off when he runs out of money to teach in a very poor Mexican-American teaching school on the Mexican border. Then he basically gets a job as a teacher. But at that crucial moment, a congressman offers him a job as a secretary, as a junior congressional aide, and he heads to Washington. First time he's left Texas. And that is the beginning of his journey.

There's a great story about him. In those days these congressional aides were all put up in a big hostel and there were communal bathrooms. He knows no one in Washington at all. The first night he's there, he takes four separate showers. Why? Because every

time he has a shower, he meets some other man in the changing room who he can talk to and some other new kid who's turned up. He brushes his teeth five separate times, because he wants an excuse to stand next to someone at the sinks and get to talk to them. He's an amazing hustler.

Another thing about him is his unbelievable appetite for work. He worked all hours in every job he did, including President. No one worked harder than him. Then, from being a congressional aide, he gets to run one of Franklin Roosevelt's New Deal programs in Texas. He then becomes the congressman and he's on his way up. In 1948 he wins the most corrupt, closest, senate race, I think still in American history, when he beats the favourite, a self-styled cowboy called Coke Stevenson. He beats him by around 87 votes. Using, essentially, vote rigging, ballot stuffing, from these bosses, agricultural bosses, who controlled the Mexican workforces up near the border in Texas. He just makes sure that he doesn't close his ballot boxes until the other guy's closed all his.

ID: This is something that people in this country can't really get their heads around, can they? I wouldn't say it's endemic in American politics, but that's why there were so many suspicions, in a way, about the last election.

GO: Yes, voting reform and the accuracy of elections is still a contentious issue in America. It was fairly normal, amazingly, in US races in the 60s and 70s, for that kind of thing to happen. John F Kennedy narrowly beat Richard Nixon in the 1960 US presidential race. By the way, a race that Johnson wanted to be the presidential candidate, but ends up as the vice presidential candidate. It is widely thought that the Kennedy family kept the voting booths in the south side of Chicago, the poor area of Chicago, open until they had enough votes to just beat Nixon in that race. So, Johnson is certainly not the only person engaging in this. If you want to read a fantastic chapter of Robert Caro's book, read the 1948 Texas Senate race. It puts any British by-election or whatever to absolute shame. Anything that happens in Britain, it's on a different scale than America.

ID: You tell a wonderful anecdote about FDR almost predicting that Lyndon Johnson would be President.

GO: Johnson is a liberal nationalist. He's a believer in the strength of the United States. But he's a believer that the United States will only be strong if it looks after its poorest. His great hero is FDR, in the New Deal from the 1930s. He's there in the crowds when FDR is inaugurated and gave the great 'The only thing we have to fear is fear itself', inauguration speech. When he became a new member of Congress, Roosevelt took a train ride through Texas and Johnson joined him. And FDR tells his aides afterwards, that boy's going to be President. The interesting thing about that prediction is that no one from the South has been President since the Civil War. It was seen as basically impossible for a southerner to become the President. One of Johnson's great achievements is he is the first southerner to become the President, albeit of course, through the assassination of Kennedy. But nevertheless, he's the first President from the south. And he opens the door to subsequent southern presidents, Jimmy Carter, Bill Clinton, George Bush one and two. They're southern Presidents. But until Johnson, there hadn't been one. In those days, of course, the Democrat party were the party of the South, and the party of, essentially, a racist block in the Senate that had stopped any Senate legislation.

Abraham Lincoln had been a Republican and the Republicans were the party of the North, and the party that Black Americans voted for. Johnson does this trade, probably to become President. He never quite puts it like this, but he basically trades the South, the White South, for the presidency. He knows that he's got to show, he shows this as a senator first, that he can deliver civil rights. That he's not a creature of the southern Democratic White caucus.

Interestingly, when he subsequently – jumping ahead a bit here – gets re-elected with the biggest percentage vote of any American President in history, the only states he loses are the southern ones. It's the first time they haven't voted Democrat. They vote Republican. It's a presage of everything that was to subsequently come in American politics, under Reagan and, ultimately, Donald Trump. But that achievement of becoming the southern President, I think, opens the door to what we would now call the new South. Austin, where he's originally the congressman, near where he grows up, is the great booming city of America today. And he's the person who brings the South into mainstream American politics.

ID: We'll come onto his Senate career in a moment, but what did he do during the war? What he did in the war is almost emblematic of his whole life, I think.

GO: He's a congressman by this point. Some congressman have resigned from the Congress or taken a leave of absence and gone to fight in uniform for the United States in the Second World War. He doesn't do that. But he's very conscious that if he wants to be the President, he's going to need a war career. So, he arranges, essentially, a fact-finding mission to the South Pacific or South East Asia, where America is fighting Japan. He gets himself, essentially, a seat on a bombing raid over New Guinea. It was one flight in a plane and given what he would subsequently

Photograph: Darren Halstead

describe about his war experience, you would think the guy had been fighting for years and years. He went on one plane once. But the plane was shot at a lot. Other planes in the bombing mission, were shot down. One of his engines was shot. But he managed to get himself awarded an American decoration, the Silver Star. So forever after, he was like the war hero, Lyndon Johnson. I think it's too much to say it was a complete fake, because his life was, albeit not for that long, in danger.

ID: You mentioned the 1948 Senate election which he won by 87 votes. Within six years, he was majority leader. How did he achieve that?

GO: It's an amazing thing because the Senate until that point, had been entirely based on seniority, i.e., the longer you served, the more senior you got. And only the eldest senators, the ones who'd been there longest, got to be chairs of the committees. He went after the majority leadership position. For those who follow modern politics, this is the Mitch McConnell, Harry Reid position. Very powerful. It wasn't powerful when he got the job. It was actually seen as a bit of a non-job because the real power lay with the individual committees: foreign affairs, appropriations, and so on. He persuades, essentially, a bunch of Southern Democrat senators, who he later turned on on civil rights. He was later to sell them out. But to get where he needed to be, he sucked up to them. And he gets himself put in this position of Senate majority leader and transforms the post into the absolute centre of power in the Senate. He is probably the most powerful senator ever in the history of the United States.

He does that by basically working out all the tools you can use to get senators to vote for things. Whether they have a nice office, whether they go on a foreign assignment. There's a whole set of senators in the Rocky Mountain states, like Colorado, who want dams built, and he trades building dams there for their support on civil rights legislation. He's just incredibly capable at, essentially, working out what each senator needs. To get each senator over the line, what do you need to give them. To this day, he's held up as an example of a time when you could make bipartisan politics work in America, when you could work with the opposite party.

ID: And he must have done that, because of course there was a Republican President, Eisenhower. The amount of legislation that was passed in those years, there must have been cooperation along those lines.

GO: Yes, very much so. He would invite people – by this point he had a ranch down in Texas. He's very tall, by the way, six foot six. So, he's a tall guy and

he would get senators down to stay and then he would get them in the swimming pool and get them basically into the deep end, where he could stand, and they couldn't. Physically, he's big. It's not just that he's six foot tall. He has big gangly arms and big jug ears. And he stands between them and the shallow end until they can agree on his brief.

ID: Did you ever adopt any such tactics yourself, George?

GO: Politics isn't so much like this anymore. I was a junior whip. That was my first job in politics, which I loved, and I did a fair bit of cajoling myself. But not quite like on Johnson's scale. There's another great story about him, which actually I don't put in the chapter. The first girl he proposes to says no to him, or her father says no to him, because the father says that Johnson boy's never going to amount to anything. So, she turns him down. And thereafter, when he was President, his Presidential helicopter would fly him to his ranch. But instead of landing in the ranch, he'd always get the helicopter to land in the back garden of this girl's house where she was married to some other local boy. So, the whole house would shake with Marine One landing, just to remind her that, yes, this Johnson did amount to something.

ID: What was his relationship like with Kennedy? You've got this wonderful quote here. This was before, I think, the run in 1960 when he was beaten by what he called, a little scrawny fellow with rickets. Now, I've no idea whether Kennedy knew that he'd said that or not, but if he had, it's quite difficult to recover that relationship, I would have thought.

GO: Well, Kennedy was very much his junior. He was the junior senator from Massachusetts and Lyndon Johnson was Senate majority leader. So, they knew each other very well. I think Johnson just couldn't quite believe, in the primaries, that this much more junior, younger character, who he would say lacked depth and substance and whatever, beat him. Essentially because he was more telegenic and more user friendly.

Johnson's political style belonged to an age, not the television stage, and Kennedy's the first great television President. I have a theory: so Gordon Brown loves the Robert Caro biographies of Lyndon Johnson and once wrote a book review about it when he was Chancellor of the Exchequer. I can't help but think that he was beaten to the Labour Party nomination by young Tony Blair, the telegenic whippersnapper.

ID: Actually, if you go through political history in different countries, there are often circumstances like that. David Davies, David Cameron, one more

> "... no one from the South has been President since the Civil War. It was seen as basically impossible for a southerner to become the President. One of Johnson's great achievements is he is the first southerner to become the President..."

telegenic than the other, accused of not having the depth, etc. There are all sorts of parallels that you can draw, aren't there?

GO: Yes, it is a classic situation. The older insider beaten by the younger telegenic outsider. Anyway, Kennedy wins and then, interestingly, although it's debated in the Kennedy camp, including with his brother who was to emerge as Johnson's great enemy, Robert Kennedy, they basically put him on the ticket as vice president.

ID: Why did he accept it, though?

GO: So, they offer it because he can deliver Texas, they think, and it's going to be a tight presidential race, as we were discussing, against Nixon. But why does Johnson accept it? Well, this is the fascinating thing. No one can understand it. He's trading his position as the most powerful senator in American history, Senate majority leader, total lock on everything that happens at the Federal government level, for vice president. Which is famously a job with no power. His reasoning is really straightforward. He says, well, I've done my maths. One in five vice presidents, become president because the president dies. This is not like Joe Biden was Vice President but then got himself elected

President. This is, they die. He does the maths, and says, one in five's not bad odds to become President. By this point he doesn't really have another route to become President because he's so badly beaten in the primaries, and Kennedy's going to be there for eight years, he thinks.

He hates his time as vice president and he's miserable. There are various things he tries to get off the ground. By the way, in all this, he's the guy who creates NASA – it is an interesting little footnote to Johnson's life. As a senator, then as vice president, he builds up NASA, which is why it's in Houston. He basically hates being vice president and it looks like the Kennedys are going to drop him from the 1964 re-election ticket, until Kennedy is assassinated in Dallas.

ID: How realistic do you think that was? It happened a few times in the nineteenth century, but in modern American politics it hasn't really happened. I mean, even Dan Quayle survived.

GO: There was a scandal. Johnson was on the verge of being engulfed in a corruption scandal as vice president. So, it's quite plausible that that might have made him too damaging. And actually, in a subsequent decade, there are others. Agnew had to resign as vice president.

ID: That's true. So, the 22nd November 1963. Take us through the events of that day.

GO: Well Johnson becomes President as a result of, what I describe in the book as the most infamous murder in history. I remember writing those words and thinking, well, maybe there's Julius Caesar. But Kennedy's assassination is something we've all seen pictures of. It's in Texas. It's in Johnson's home territory. Johnson is in one of the cars behind. Kennedy is assassinated and others are hit. The Governor of Texas at the time, was also shot. Johnson's account of it is fascinating – he's basically pressed to the floor by a Secret Service agent. The car speeds to the hospital, Parkland Hospital, where he and his wife wait. They're put in a side room, and they wait for a couple of hours and then eventually, one of Kennedy's aides comes and tells them the President is dead.

If you think about what we think of as how a president becomes president, the inauguration, the oath, the bands, Beyonce singing on the Capital Hill – it's so choreographed. Johnson becomes President in Airforce One, which was much smaller in those days than the current Airforce One, with Kennedy's body in a coffin next to him. With Kennedy's wife, Jackie, literally covered in blood. They got a local judge to turn up with a bible and he takes the oath of office.

This is the time of the Bay of Pigs, the Cuban Missile Crisis, the Berlin Wall. This is a country deep in the middle of a deeply cold Cold War with the whole world watching. With no one knowing whether the assassination had been organised by the Soviet Union, with nuclear forces on alert. And in that situation, right from the first minute, he is not overawed by his responsibilities. He takes control. He exudes authority, control, calmness. All these people coming at him with different questions and false reports and speculation about the assassination and he's just absolutely in charge.

Lots of people freeze in those situations at every level of authority. He's the opposite. I think an overlooked part of the Johnson legacy, is that he handles that. He reassures America. He reassures the world. He stands down escalating nuclear tension with the Soviet Union. He helps the nation mourn, and gives a speech five days later to Congress, which captures the national mood. People think of Kennedy as the great communicator. But there are moments, with his civil rights speech, with his speech to Congress after the Kennedy assassination, when he does catch the national mood.

I tell a good story in the book about meeting Lucy Baines Johnson, his daughter. She's at school in Washington, and suddenly word goes around the National Cathedral Girls School in Washington that something's happened, but they don't know what. Then they're all assembled and told that John F Kennedy has been assassinated. They're all in shock and they're tears. She hasn't worked out what it means until two Secret Service agents walk into the hall in front of all the other girls and she's led out because she's now the daughter of the President and they want to protect her.

I can think of some recent examples of British politics where people are elected as continuity candidates but think they're change candidates, and that's a mistake. And he understands that he's an inheritor, he hasn't got the mandate in his own right. He's taken over because his predecessor has died and he says for Kennedy's sake, let's pass civil rights, let's start the war on poverty that Kennedy had promised, let's deliver a tax cut which Kennedy had talked about. In other words, he adopts the Kennedy agenda and that gets him through to the re-election about a year later.

ID: How much changed after that election? The 65 to 69 period, was that pure Johnson?

GO: That's pure Johnson.

ID: So, there wasn't any Kennedy overhang there?

GO: Well, the big overhang is Vietnam. Johnson gets re-elected with 61 per cent of the vote. No one's ever done that before or since.

ID: How much was that him and how much was it the candidate opposite him, Goldwater?

GO: Well, it always helps to be running against someone useless, as the Torys who faced Jeremy Corbin will tell you. But Goldwater was actually a prototype of the changes coming to the Republican Party. He's a libertarian senator from Arizona. Democrats run the famous ad of a girl picking petals off a daisy which turns into a countdown to a nuclear attack. They're basically saying this Goldwater is crazy, he's going to put us into a nuclear war. So that definitely helps. But Johnson is very popular, and he's achieved real things in the year he's been President. He's passed one of the civil rights laws, on segregation in schools and in public spaces. There are solid achievements, even in that first year as President. When re-elected as President, he then embarks on what's called the Great Society program, which is Medicare, Medicaid, public education, and all sorts of other things which we now take for granted like Federal Food Safety laws, like the FDA, Food and Drug Administration, Federal Road Safety rules around car designs and seatbelts. So, it's a big progressive era. Of course, it's a progressive era in other areas too. If you think of Britain in the late sixties, the legalisation of homosexuality, end of the death penalty, the legalisation of abortion, divorce, the Roy Jenkins era. So, I wouldn't say that the Johnson regime is unique in the world in this period, but it's nevertheless striking what he achieves.

ID: And particularly when you've got the Vietnam War hanging over everything. If we take a modern-day example, COVID seems to have effectively stalled any reform agenda that our current government has. And yet, the Vietnam War didn't stop the reform agenda that Johnson had.

GO: Well, it does in the end. I would disagree with you. I think in the end Vietnam becomes so all-consuming and expensive, that Johnson runs out of money and political capital. Real capital and political capital, for his domestic program. That quite often happens in America with conflicts. The Second World War killed off the New Deal, ultimately. Johnson inherits from Kennedy a presence in Vietnam, 16,000 advisors. The one area where he has not much expertise is foreign affairs. And he decides to reappoint Kennedy's stellar national security team, Bob McNamara, McGeorge Bundy, Dean Rusk – these are the best of the brightest. And there's a rapid escalation of the Vietnam War in those first couple of years of his re-election. Suddenly, within two years of him being re-elected as President, you have hundreds of thousands of American soldiers in Vietnam in combat operations, and America doubling down to try and win. It tears apart the Democrat Party. Much like Iraq tore apart the British Labour Party. It exhausts the administration. It makes Johnson so unpopular he can't actually visit most places. He ends up just visiting military bases.

He's the only President the Queen didn't meet and that's because he can't come. Britain has taken, what I think is an understudied decision, not to join the Vietnam War. Even though Australia and other American allies did. And he doesn't come to Britain. It's a textbook case in how you can get deeper and deeper into a conflict.

For everybody who thinks we've learnt the lessons and we would never repeat such a thing, these are really hard dilemmas. You want to stand up to Russian aggression, but you're not prepared to get involved, to send soldiers into the Ukraine? You talk about containing China's ambitions, are you going to put soldiers into Vietnam? Johnson's facing quite similar questions to the kind of questions we would face about aggression from what they would regard as an enemy.

Once they're in the conflict, all the dynamics play out. First of all, they misunderstand the conflict. They think it's an ideological war against communism on behalf of the free world. They made the mistake, as they see it in a previous generation, of losing China to the communists, which a generation of American politicians were held to account for. They think of Munich and not standing up to Hitler. So, they think of it as a kind of stand against a dictator. But of course, in Vietnam it is seen as a nationalist struggle against colonial forces. First French, then American. He gets terrible information from the military, which doesn't particularly surprise me. He keeps being told, we're on the verge of winning, Mr President, don't quit now, just a few more troops. The British military which I've worked with, are brilliant and amazing. They are very good at telling you, don't get into a war. But once you're in a war, they understandably want to get the job done and so they're often the last people to say, actually, we've lost.

ID: Was there any moment in his presidency where he seriously considered withdrawing?

GO: He is told to withdraw by his vice president, Hubert Humphrey, and then in a really dramatic moment by Bob McNamara, who's Defence Secretary, and who had been CEO of Ford Motor Company and brought modern management techniques to the Department of Defence, in 1967, McNamara says we've lost, and we've got to get out. There's an extraordinary moment which I detail in the chapter, where some reporter says to him, what's at stake in this war, Mr President? And he literally gets out his penis and puts it on the table and says, that's what's

at stake. It's an unbelieve story but it is true. Johnson goes around saying I'm not going to be the first American President who loses a war. You also get this other dynamic which, very sadly, I saw in Afghanistan and Iraq, where once soldiers start losing their lives and you get injured veterans coming back, you think, well, what about for their sake, we can't give up.

So, he's stuck in this, and he becomes increasingly paranoid. The guy who had been so calm at the time of the Kennedy assassination, starts to believe that communists have infiltrated student campuses. He has the FBI and the CIA spying on all his political opponents and spying on student groups in America. If you think of where it ends up, and people who know something about America, will know that by the late 1960s, the country is deeply divided. There have been race riots in the cities. The college campuses are deeply radicalised. You end up with tragedies like Kent State where US soldiers killed students. And although this is after Johnson decided not to rerun, the 1968 Democrat Convention takes place essentially in the middle of a riot in Chicago. By the end, Vietnam has consumed everything and Nixon, ironically, is elected to bring the peace and end the war.

ID: How did it get to the point where he said on the 31st March 1968, I will not seek, and I will not accept the nomination of my party for another term as your President? Was it just Vietnam or was it wider than that?

GO: It's a big decision not to see re-election. In my lifetime I don't think an American President has not sought re-election when they've had the opportunity. He'd only served a year after Kennedy's assassination, so he could have served a full second term. He backs off, I think, for three reasons. One, he's not sure he can win. Second, he begins to worry about his health. His doctors start to tell him that he's not well, and he was actually to die four years later. And then, crucially, he's going to fight Bobby Kennedy for the nomination. And Bobby Kennedy's coming after him. There's a tragedy there because Bobby Kennedy is himself assassinated after the California primary in that contest. But by that point, Johnson has decided to quit. I think the one big miscalculation he makes is he thinks it'll be easier to deliver peace in Vietnam in the period where he's still President but he's not running for re-election. He had another great saying, which is, 'Power is where power goes.' And the moment when he's not running for re-election, all the power disappears. As some British Prime Ministers would tell you, once you tell everyone you're going to quit, your authority...

ID: I can't think who you're referring to.

GO: Actually, there've been two recently. The authority starts to drain away, and Johnson finds he can't deliver the peace. North Vietnam says, well, this guy's not going to be around. So, one of the personal tragedies for Johnson is, they do the deal with Nixon. Just like, in fact, if you remember the Iranians – they did the deal with Reagan, not Carter, in 79, 80 to get the hostages out of Tehran. So, Johnson can't deliver the peace in Vietnam. Essentially, his presidency therefore ends in defeat and because his vice president is defeated in the context against Richard Nixon, it's seen as a defeat of his presidency, as well as Hubert Humphrey's candidacy.

ID: He dies just before his second term would have ended. Which gives another great What If of history.

GO: Yes, he retires to the banks of the Pedernales River in Austin where he grew up and where he now had his big ranch. He creates the Johnson Library in Austin which I've been to and which is definitely worth a visit. Austin, generally by the way, if you like things American, is a great city to visit. And he dies.

ID: He's only 64 as well.

GO: He's only 64. He's a heavy smoker, drinker, hasn't had a healthy lifestyle at all. But I wouldn't think that was too unusual of men of that era, actually. I think a lot of men did die in their sixties. It's more unusual now. Even though it's only four years later, it feels like the world's moving on. I think Johnson, because of Vietnam, is essentially forgotten. Partly because he's sandwiched between Kennedy and the terrible assassination, and Nixon and Watergate, Johnson people tend to forget about. But he comes back into fashion when people find it increasingly hard to get things done. That's why Joe Biden cites LBJ as a hero of his, and someone he wants to emulate. When Barack Obama passed his Affordable Healthcare Act, he cited the Great Society. And I think the Vietnam issues, which were primarily about containing communist China – who knows, they may be coming right back into centre stage in global politics.

ID: It's so interesting. When you think, can you evaluate Richard Nixon's presidency, if you just put Watergate to one side? Can you evaluate LBJ's presidency if you put Vietnam to one side? Well, the answer is no on both counts. But if Vietnam hadn't happened, he would have gone down in history, I guess, as one of the greatest Presidents.

GO Yes, I think so. Certainly, he's the complete hero of the America liberal left. Again, there are some parallels with the Labour Party and Tony Blair, and the domestic achievements for the left in Britain, could

Photograph: Isabella and Zsa Fischer

never outweigh the Iraq War. And I saw it tear the left apart here. I think on a much bigger scale, and the loss of life was sadly even greater, in Vietnam it destroys the Democrat Party. But Johnson sets up the future of politics in America through the huge expansion of the federal government. He expands the federal government into all areas of national life, which for all the talk of the Reagans and George Bushs of this world, has never been rolled back. No one is going to fight the next Presidential election saying they're going to get rid of Medicare or Medicaid.

He unlocks the door to four subsequent southern Presidents and, arguably, unlocks the economic regeneration of the South. Of course, the civil rights laws he passes, for all the problems that have subsequently happened, the fact that Georgia ends up voting Democrat again and there's an African American Black majority, is because Johnson gave them the vote. So, he sets in train a whole set of forces in American politics that still shape it today.

ID: So in the chart of 46 Presidents, where do you place him?

GO: Well, all I know is when you asked me, who would I like to write, I thought Johnson came number one. I don't think he's a great President like FDR or Lincoln. I know it's a bit trite to say, but Lincoln, when you read and study what Lincoln had to deal with – basically his country falling apart in civil war, Lincoln's a great president. Washington's a great president, for deciding he's only going to run for two terms. He's going to hand over power peacefully to a successor. FDR, both in the New Deal and the Second World War, and Reagan gave America back it's self-confidence. Johnson's not in that first rank, but second rank.

ID: Well, I think there'll be a lot of people who having read your chapter, will be out to buy the Caro biographies, if they haven't bought them already. George, it's been an absolute pleasure. Thank you very much.

The Presidents & Prime Ministers

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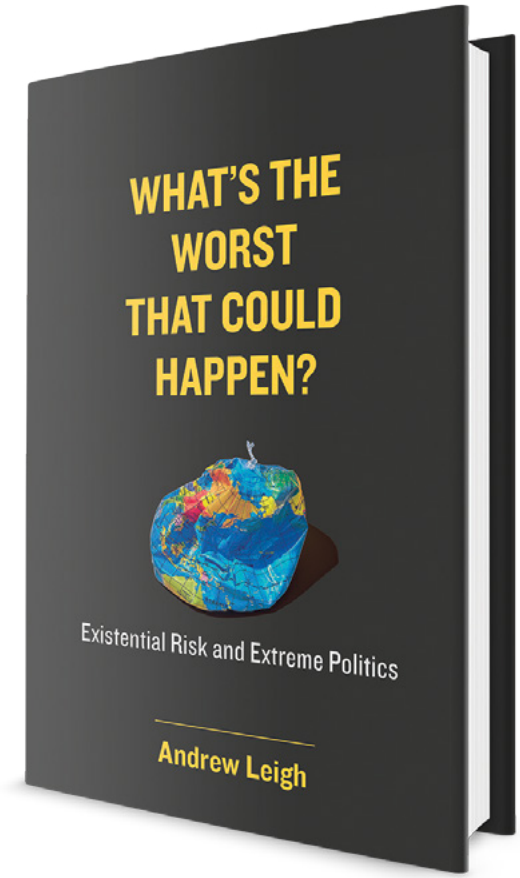

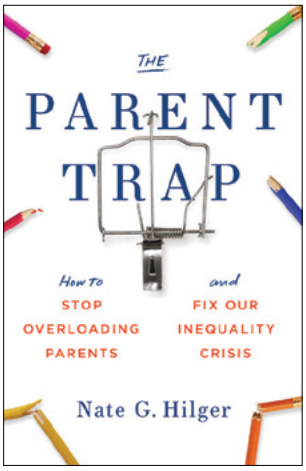

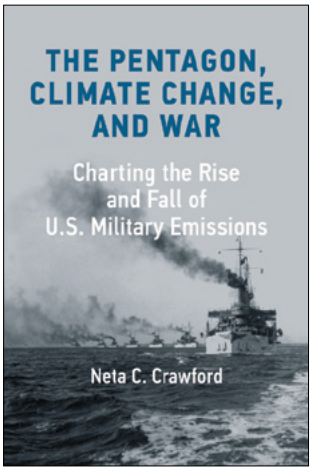

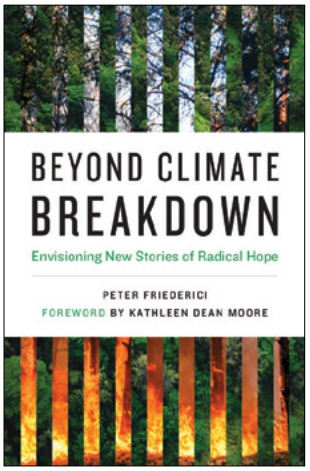

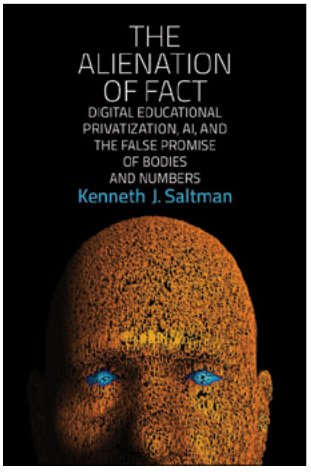

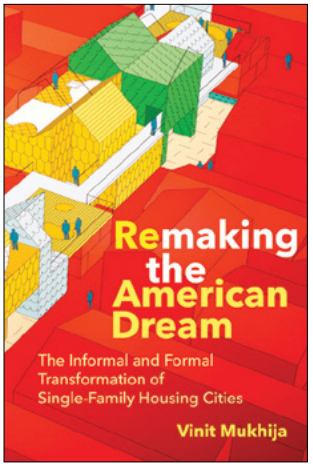

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A masterclass in history

HENRY KISSINGER
SECRETS OF STATECRAFT

Interview by Andrew Roberts

Andrew Roberts: We're very fortunate to have Dr Henry Kissinger, who clearly has no thoughts about retiring at the age of 98. Henry, has history as an academic discipline always been a very important part of your life? Did you have a charismatic history teacher who sparked your interest in the subject, or was it an inescapable part of your background and upbringing in 1920s and 1930s Germany?

Henry Kissenger: I would say there is a starting point to it. As a child, I was interested in reading Roman history, for some reason. But the real interest developed when I was in the army and I became acquainted with a man by the name of Fritz Kraemer. He was a German Conservative who had left Germany and found himself in the American Army. He wore a monocle and was a strange person by those standards. But he awoke my interest in systematic history. He recommended reading [Oswald] Spengler and other philosophers of history. And since then – I was about 19 at that time – I've been working on it systematically.

AR: Didn't Spengler form part of your senior undergraduate thesis? When you were studying at Harvard, you wrote *The Meaning Of History: Reflections On Spengler, Toynbee, And Kant*.

HK: Well, I was fascinated by this concept, which today I take for granted but was new to me then, that every aspect of a society is really part of a historical theme. That you can learn about societies not just by reading the history consecutively, but by studying its architecture, its philosophy. I think that is true, and it became part of my later reflections on history and politics.

AR: So you can see a sort of structure and meaning in the past?

HK: Not a literal structure, because events appear unpredictably and each generation has to react to them by the values and standards and convictions it has developed. But there are comparable themes that appear. They're not identical, they have to be looked at by analogy. And history repeats itself, not in exactly the same sequence. But it repeats itself by comparable events.

AR: Do you think mankind learns from history? Can you think of any examples of that happening?

HK: It depends on the leaders. For Churchill, history was crucial. A student once asked him what he could do to learn about statesmanship, and he said, study history, study history. I think many of the great statesmen had a profound conception of history, but they had to shape it for their own period. If you take De Gaulle, who was a contemporary of Churchill's, his notion of history was not identical with Churchill.

Churchill's was a consecutive evolution, in which the past strengthened you for dealing with the present. But it was not simply a cookbook from which you could learn. For De Gaulle, history was an example in which France could restore itself to greatness. It wasn't so much individual events from which you could learn, but it was the grandeur of the performance.

For Churchill, the issue was to derive strength from British history and apply it to a new circumstance, which was an isolated Britain. For De Gaulle, history was something from which to re-educate his society.

AR: Yes, it reminds us really in a sense that Churchill was the last of the Whigs when it came to writing

history. I'm very interested in your doctoral thesis, which was *Peace, Legitimacy, and the Equilibrium*. It was a study of the statesmanship of Castlereagh and Metternich, both of whom, of course, were very interested in history and the past. It was about the diplomacy that established peace in Europe after the Napoleonic Wars, but it established this concept of legitimacy as being central to understanding what states can and cannot do in international relations. And the theory, I feel, has held up remarkably well over the past 66 years since you wrote it. But what do you think of that theory in the light of recent events?

HK: The challenge after great upheavals is on what basis are you going to reconstruct society and history. You can of course attempt to do it on the basis of power, and you can do it by inventing a new ideology and have a kind of religious revival, but the concept of legitimacy is a substitute for power. It enables societies to operate coherently on the basis of the conviction of what is proper and appropriate in their circumstances.

It has operated quite well in the post-war period of the Second World War, and it operated for nearly 100 years after the Napoleonic Wars. It doesn't automatically give societies a precise answer, but it gives them an approximation of the limits beyond which they must not go, and of the basic direction that is considered appropriate.

Now in the current period, the question is: is Putin doing an assault on the legitimacy of the post-Second World War period, or is it an act of desperation of a society that is declining and that is trying to find a new place? And thinks that it can form its new definition by resistance to what it conceives as a total overthrow of the historical pattern which Russia has left. That is the question which one wants to answer with respect to Putin.

I personally lean to the latter interpretation, not to the former. I do not believe it's an assault that would march westward if it succeeded. But I agree with western societies that feel they have to stop it at this point, before the notion might develop of overthrowing the whole system. But in my analysis of what is happening, it is more an act of desperation of a society that sees an evolution that will lead to its historic performance, and that is using force.

But it is using the force in a manner that Western societies identified with what happened in the twentieth century, and to which they were especially sensitive. And which they felt they could not allow to be established, whatever its psychological origin.

AR: When you were negotiating the end of the Vietnam War with Le Duc Tho, or when you were conducting the shuttle diplomacy that tried to end the conflict in the Middle East, did you feel the weight of history on your shoulders? How much did you worry about what future generations would think about your efforts, how you would be portrayed in history, and so on?

HK: With respect to the Vietnam War, I did not think that. With respect to the Vietnam War, I thought it was a circumstance on which the safety of the world depended, in which the United States had embroiled itself, maybe unwisely. At the time that Nixon came into office, we had 500,000 people in an area as far away from America as you could be, not only physically, but culturally.

So our view was that, when so many other societies depended on us, we could not simply act as if it were a television programme that you could turn off, and march out, as we've seen in Afghanistan and elsewhere. Turning off an extended crisis is extraordinarily complex.

So that was really the basic conviction: that it had to end, in a way we considered honourable. That is, that the people whom we had pledged to defend were not simply abandoned as a tool in a great power struggle, or even small power struggle. That was the basic motivation.

On the role of nuclear weapons, I felt very deeply that this was an issue on which the judgement of history might depend – that this was a weapon that couldn't be used in the traditional way. We felt we had an obligation with respect to nuclear weapons to maintain their use if there were no other alternative, but to shrink the alternatives to the smallest responsible number. With respect to that, I did have the feeling that history demanded that of us. And I feel that, even more with respect to the high technology of the contemporary period, which has no spokesman for constraint, it has only spokesmen for more rapid development. And those implications will be manifold, be more complex, than those with nuclear weapons.

AR: You mentioned Richard Nixon. How acute was his sense of history? Did you discuss history with him? Do you think his knowledge about the past affected his presidency?

HK: The interesting thing about my relationship with Nixon was that I had never met him before he appointed me to this position. I had in fact been a principal supporter of Nelson Rockefeller, who was his chief opponent within the Republican Party. Therefore, when I joined him, or when he persuaded me to join him, I was astonished at how interested he was in a certain kind of history. I would say from the Napoleonic period to the present. Probably more Napoleon the Third than Napoleon the First.

AR: That's pretty unusual?

HK: He was interested in Napoleon, but he was interested in the rise and decline of western societies as he had observed it, backwards from his own lifetime by about 100 years.

AR: Could he see flashes of the French Second Empire in the West of the day? That's an extraordinary thought.

HK: Well, he felt that there was a point of French decline that was associated with that, and he was very interested in why that had happened. In the likes of Germany, he did not reflect deeply about the Reformation or issues like this. But he was better educated than most leaders because he read a lot. That's how he occupied his free time.

AR: Do you feel that a sense of history like that has waned in the world leaders that you've met since you were Secretary of State and National Security Advisor? That's half a century ago. Do you think that today's world leaders read and think about history as much as Richard Nixon did, and as much as they ought to?

HK: Well, Richard Nixon was not typical of his period. But even the other Presidents I have known were more concerned with history than the generation that is brought up on the internet, which tends to make its judgements more on the basis of reactions to immediate events. And on the impact of events on the immediate situation. And most of the people before, that I knew before the rise of the internet, they might not have been great scholars of history, but they had more of a respect for history than one finds today.

AR: Let's talk about China. From your memories of Mao Zedong and Deng Xiaoping and the others, what was their sense of history? Did it affect them politically? And with President Xi today? How affected is he by the concept of the Century of Shame in the nineteenth and early twentieth centuries, for example?

HK: Well, in my observation, when I started dealing with the Chinese, I did not know more than elementary things about their history. Of course, I've become very preoccupied with it now. Partly because I think that Chinese society operates by a historical experience that infuses its consciousness. So that its leaders can speak about historical events with an assurance that one does not find in the West, among western leaders.

And also, it's not just an intellectual assurance, but with the sense they were still part of that process. And in that process, the humiliation of China for 100 years played a role. But even more, that the relationship of China to the rest of the world was determined hierarchically in their thinking, by the degree to which other societies approximated their degree of culture, which they never could fully reach.

So, when the British envoy at the end of the eighteenth century appeared, he was treated as a representative of a country that was attempting to gain the favour of the Emperor. And messages were delivered to him and the reply of the letter he brought from the King of England was not handed to him by the Emperor, but left on the chair on which the Emperor sat for him to pick up.

And the reply was that, if you're asking for regular contacts, then I don't think it will. But if you want to send an ambassador, and if he's prepared to wear Chinese clothes, and live in a Chinese residence and will never be permitted to leave, he will be treated hospitably.

AR: Yes, that was Lord McCartney, wasn't it? And he refused to do the kowtow as well, and it wrecked Anglo-Chinese relations for some time in the 1770s and 1780s.

HK: Exactly. There was a big cultural divide from that point. And at this moment, I think Xi does not carry it to that extreme. A leading current Chinese intellectual said to me two years ago that 'The difference between western countries and Chinese countries, is that the western countries have always been relatively small. And were therefore very conscious of the domestic structures of others and therefore very involved in the domestic structures of each other. While we have always been very large, and our problem is that we may have internal conflicts. And that is our danger. But our society operates with the consciousness of a very large society and does not have to worry about the internal struggles.' And I think this is a concept that is characteristic of what is going on in current relations.

AR: It must be very helpful to Chinese politicians to be able to make references to the past, where they know that the majority of the population, or at least a large proportion of the population, will know what they're talking about. Which is much more difficult for western leaders today, because of the paucity of historical knowledge amongst the population. Do you think that would be fair?

HK: And the paucity of agreement among the population.

AR: Yes. Well, of course, you can do that in a society where you control education in the way the Chinese

can do. Whereas we can't, of course.

Something I ask all my guests is, what's your favourite counterfactual? What's your favourite what-if moment of history, where history might have turned out differently? Henry, do you have a favourite counterfactual?

HK: Actually, I do. And it's a relatively obscure event. It is when the British War Minister went to Berlin in 1912 and proposed that, if Germany would cut down its dreadnoughts, Britain would consider a kind of neutrality in European wars. He did not define exactly what that neutrality would be, and it never reached the point of discussing what degree of dreadnought reduction. But the German Emperor turned it down as an insult to his domestic prerogatives.

But when one reflects that the German Navy of whatever size it was, left port only one time in the 1914 World War, the First World War, and what might have happened if that dialogue had started. Whether the war might not have started, or whether it would have started under different terms. It would have been easier to settle sooner.

AR: Yes, the Haldane Mission it was called, and a clear offer was made, and was turned down. And it wasn't as though the German navy was going to be strong enough to destroy the Royal Navy in the North Sea.

HK: It was really for the Emperor's symbolic manner of being as strong as the British Navy, which was precisely what Britain would not allow without resistance.

AR: Don't you feel, just to take your counterfactual one stage further, that if Britain therefore did not intervene on the side of France in 1914, you might have got a 1940 situation, a quarter of a century earlier?

HK: Well, we could have had a 1940 situation, and Britain faced with that might have intervened anyway, because it would not permit one country to dominate Europe. And probably should have intervened. But the outcome of the war would have been more like the Napoleonic Wars, where the victims were willing and eager to build the defeated back into European society rather than the precise structure, which was untenable.

AR: Also, if the Great War hadn't broken out, you wouldn't have got the Bolshevik Revolution, you wouldn't have got the rise of the Nazis and the Holocaust. Your life, of all people's, your life would have been tremendously different, wouldn't it?

HK: I'd be in Germany today, teaching in high school.

AR: You certainly would. You'd be a marvellous teacher by the way, Henry. What history book or biography are you reading at the moment? What book would you be telling your German high school students to be reading right now?

HK: The book I'm reading most intensely right now is by Ray Dalio and it's a book about the rise and fall of civilisations. But based more on their financial evolution. It traces the history of Britain, The Netherlands, other societies, and America today. More on the evolution of financial institutions, which has not been my primary interest up to now. But that is the book that occupies me the most.

Also, because I'm working on a book right now about the impact of statesmanship, I'm busy reading books on the nature of statesmanship at the end of the First World War, of what societies thought they would accomplish in the war, because that was one of the great failures of history.

AR: We share a publisher in Stuart Proffitt, and he's told me about your new book on statesmanship, and it sounds absolutely fascinating. I think you're an inspiration to every author that you'll be 99 by the time this book comes out. I appreciate it enormously. It's been a great honour and a pleasure.

HK: Thank you for inviting me. You know I've been a great admirer of your work.

AR: Thank you so much for saying that. I'm definitely keeping that in after the edit, Henry!

How capitalists can save the environment

Photograph: Li-An Lim

CHRIS HOHN
MONEY MAZE PODCAST

Interview by Simon Brewer

Simon Brewer: For anyone who is unfamiliar with TCI, it stands for The Children's Investment fund. It was established in June 2003 by Chris Hohn, and today manages circa $37 billion. The Children's Investment Fund Foundation or CIFF, which you endowed, is now the largest children's charity in the world. How did your upbringing prepare you for such a successful career in finance?

Chris Hohn: Mine is a somewhat unlikely story. I was the son of a car mechanic, immigrants from Jamaica, grew up in a small town, studied my undergraduate degree in the UK where I did accounting and business economics. As luck would have it, I was taught by a visiting professor from Harvard Business School who taught entrepreneurship. Took me under his wing and said, you really should find a way to get to Harvard Business School. A few years later, I was admitted.

But really, I think the key points were, as is often said, that an immigrant feels a bit more like an outsider, they challenge the establishment. I think that was a part of my psychological makeup, to think in an unconstrained manner. Harvard Business School taught me that there was no reason to assume people were smarter than you, that was what I learnt there.

SB: You've committed over $600 million to climate change initiatives, and yet I suspect we are only at the foothills of this journey for you. What's driving this passion and what's driving the Say On Climate campaign?

CH: I think it's widely understood now that climate change is the single biggest challenge of this generation and of future generations. In particular for poor countries, as climate change doesn't have equal effects on everybody. In poor countries, soils are drying out, making it very difficult and every year harder, to grow food, leading to malnutrition. The billions of smallholder farmers who are subsistence farmers are feeling the effects of pollution of the rich world, and there's an injustice to that.

I got into climate change because I was interested in children and poverty in all countries, and I realised this effect more than a decade ago would occur. That's the motivation. Secondly, as far as the Say On Climate initiative goes, we realised that 35 per cent of global emissions come from companies. Most companies don't have any plan to address their emissions. They don't even disclose their emissions, and there's no accountability mechanism for their owners, the shareholders, to instruct them or give feedback on what they should be doing, what they are doing.

Together with CIFF, the foundation I endowed, we came up with this concept, which has been labelled, the Say On Climate, which is very simple. It's an AGM resolution that mandates a company to disclose their emissions consistent with TCFD (Task Force on Climate-related Financial Disclosures) standards. Secondly, to give their plan to manage those emissions. Thirdly, there's an advisory annual AGM on the plan and their performance against that plan.

A very simple concept, but it can make a huge difference because it will create forced disclosure of emissions and plans to manage them. It's an accountability mechanism. I'm fully convinced it's going to make a significant difference at how companies look at this, and pressure them to reduce their emissions. We already have many large companies that have adopted it.

SB: When you engage with these corporates, how do you prioritise your message and also help them understand the urgency?

CH: Firstly, quite a few companies will adopt it voluntarily. Investors, it's clear, are willing to vote and support these initiatives if they're filed. BlackRock are very clear: they will vote for them. In many cases you'll see companies rather than have a contested fight, they're willing to adopt it,

There's a website, sayonclimate.org where you can see the companies that have adopted it. Canadian National, Canadian Pacific, Moody's, Unilever, Royal Dutch Shell, Glencore, Rio Tinto have adopted it. The list is building. These are serious companies, so nobody can say this is a joke. It'll be down to the shareholders to make sure that the plans aren't just rubber-stamped, but they're actively scrutinised and where they're not good enough, voted against.

The proof of the pudding will be in the actual emissions and emissions intensity. If that isn't declining, consistent with the Paris Agreement, at a meaningful rate, then I would expect shareholders to vote against the plans and vote against the boards.

It's important that shareholders send a message to managements that refuse to disclose emissions or have a credible plan to manage them, that that won't be accepted. Greenhouse gas emissions, pollution generally, can have an effect on long-term returns. It will be because carbon is going to be regulated. There are carbon taxes already of a significant nature in Europe, and spreading through the rest of the world. You lower your cost of capital, the greener you are. Your relationships and image to your customers and employees is improved substantially the greener you are. It's a win to do so and it's not really optional anymore. But some companies are still backward-looking and investors need to explain that to them. I'm asking shareholders to realise it's in their self-interest to instruct boards that they are the owners, and they want this information, they want this accountability mechanism, and it's ultimately in the interest of the company.

SB: What part of the charity has given you the most satisfaction?

CB: I think the work in malnutrition, neglected tropical diseases, family planning, these are all very important things. On the health side, I think it is seeing the direct impact on people. Simple things, it could be clean water – drilling in Ethiopia for clean water without which people can't exist. Surgeries for people with trachoma. You can see with your own eyes what's being achieved. But at the same time, I recognise that climate trumps everything ultimately. If we destroy the soil and aren't able to grow food, that will trump any health initiative we could ever attempt.

SB: Do you feel sometimes like CIFF, you have embarked on this mission and you are a small minority. Are you surprised that there aren't others who have embarked on this with you vocally?

CH: It's an important question because no individual can change everything. But we can set an example and do our part. I'm optimistic that the world is going to change. That crises like the coronavirus show people that no one lives as an island. Everyone is impacted by the wellbeing of everybody else. Climate is another example of that – pandemics and climate change show us we're one world, we're not unconnected from everybody else.

SB: I'd like to ask some more general closing questions. In your position as a philanthropist I note you have worked with other great philanthropists like Bill Gates and Warren Buffett. I wonder what struck you most from working and speaking with some of these other figures?

CH: I know Bill Gates, and I have a lot of respect for him. We worked together on climate and health. He authentically cares. He's a hardworking person. I have the highest respect for Bill Gates, and the leverage that he's created with Warren Buffett with The Giving Pledge, where he's created a club, if you like, of people willing to give away the majority of their wealth and commit that to philanthropy.

Warren Buffett, I respect him for gifting to Bill Gates his wealth to take on. That was the greatest achievement of Warren Buffett. He's respected as an investor, but he should be more respected as a philanthropist.

SB: What advice would you give to a 20-year-old Chris Hohn?

CH: Follow your passion. That's what I said to my son. Whatever it is. Life is really too short to not enjoy every day of your life. Find out who you are. Discover who you are. Self-analysis is important. People think life is about doing things, what you achieve. But that's all wrong. The real secret of life is who you become. My biggest piece of advice, figure out who you want to become, not what you want to do. Nobody really focuses on what they did at the end of the life. It's just who they were.

SB: A final question, if you could tell our audience just one thing, what would it be?

CH: I would encourage them to evaluate who they are, who they would like to be on a spiritual level, because that drives everything. Something I only recently understood the last few years and it was an important discovery for me.

SB: Chris, thank you very much indeed.

CH: Thank you, Simon.

Time is brain

STEVE DAVIS
HUMANS OF PURPOSE

Interview by Mike Davis

Mike Davis: I'm thrilled to be here with my father, Steven Davis OAM. Welcome to the podcast.

Steve Davis: Thanks, Mike. It's really a privilege to be here.

MD: Tell us a little bit about your journey in medicine.

SD: I decided to do medicine when I was about 10 or 11, and my cousin Graham and I were playing baseball in the street, and he whacked me in the head unintentionally. I was briefly knocked out and had to go to the GP for stitches in my head, and I just thought the whole medical scene was amazing, and that's when I decided I wanted to do medicine.

So, I worked hard and I got into medicine. Throughout my studies I was going to do psychiatry and then I changed to neurology. It was still the brain, but I felt I was using my medical training better. I was firstly very interested in the idea of psychosomatic medicine, the link between the brain and the mind, and I thought that could be a fascinating area to work in. But then I did a term of neurology. I think in life it's very much by chance what you do, and I worked with someone who I found pretty inspirational who was a neurologist at the Alfred Hospital. He has passed away now, but he wrote me a letter at the end of my three-month time with him and said, 'You should do neurology.'

MD: What was it like being resident or a young doctor back in the seventies?

SD: It was very different. I remember at the Royal Melbourne Hospital, patients had spittoons that they'd spit into. They'd have bacon and eggs and a cigarette for breakfast. I was told very early on there are a couple of agitated patients in the ward, and the nurse in charge said, 'Doctor, just settle them down. Hospital brandy, strictly for medicinal purposes.'

MD: Part of being a stroke specialist like you are, a neurologist, isn't just about treating patients. You do a lot of research. You've always done a lot of research and published a lot of fantastic papers. How has treatment and management evolved over the past 20 years?

SD: It's totally changed. When I trained in medicine, there was no treatment for stroke. In fact, when I was an intern – I'll never forget this – the person that controlled entry into the hospital of emergency patients would say, 'I'm really sorry, you're getting a CVA patient (a cerebrovascular accident). But don't worry. The next one will be interesting.' What a terrible comment. Patients' mortality rate was much higher, and they just weren't managed properly. And then there were a series of breakthroughs over the years. Firstly, treating people as a specialised unit, a stroke unit, with allied health, doctors, nurses, all following expert guidelines reduced mortality and improved outcomes. Then the era of clot-pasting treatments came – treatments to remove blood clots from the brain. We learnt that early on after stroke brain tissue could be saved by early reperfusion and reoxygenation.

MD: Is that where thrombolysis comes in, TPA treatments and the like?

SD: Yes. Exactly, which radically changed everything.

MD: So, the time between when a stroke happens and the care afterwards becomes extremely important.

SD: It is. We use this saying, 'Time is brain.' And every minute counts. But it's very interesting with stroke. There are what's called fast growers and slow growers and you can predict it a bit by imaging of the brain. In other words, some people evolve very rapidly, get a lot of damage very quickly. Others can evolve over many, many hours. We don't know exactly what the time window is, but generally earlier is better.

MD: How different is it today for medical students? What are they like compared to what it was like back in the day?

SD: They're very clever. And frankly, I find with my residents, this isn't false humility, they're smarter than I am. They're often multi-talented with lots of different interests. One of our trainees at the moment's just published a book which is very impressive – a medical book for a lay audience, with explanations of yawning and coughing and those sorts of things.

Yeah, they're very bright, very switched-on but the computer age has slightly gotten in the way of how they relate to patients. On ward rounds I would like them to be hanging off every word, and they don't. They're busy doing everything on the computer rather than focusing on the interaction with the patient.

MD: How has the internet and email changed global research and collaboration?

SD: Totally. People collaborate a lot more internationally. The age of the single isolated researcher for medicine is virtually gone. Everyone collaborates. Clinical trials, of course, rely on people working together across time zones around the world. That has its challenges also and it's been brought into focus in the´COVID era. But I think technology has made us lose sight of human connection way too much.

MD: Let's talk about the grant you won from the NHMRC (National Health and Medical Research Council) to start the stroke ambulance, and how that's extended since.

SD: So, like everything, this is teamwork, many others contributed to this. The stroke ambulance concept started in Germany in about 2006 with a guy called Klaus Fassbinder who had the idea of putting a CT scan in an ambulance, so you get a picture of the brain and you can decide whether it was a stroke, and whether you should use clot-busting agents. Then it took off in the United States some years later, so we decided we were really keen to get one here. We were lucky to have anonymous donors who put their hands in their pockets, who believed in the concept, and supported it. It's been universally regarded as a great success.

MD: How often do you get to go out in the stroke ambulance?

SD: Once every four weeks. We love working with the paramedics because they've got this very, very simple concept: save lives. Fix them up, don't let them die.

On the ambulance we have the two paramedics, and a doctor, nurse, and a radiographer. The radiographer takes pictures of the brain. But the new frontier is the scanner that we use. It weighs half a ton. We'd like to get these scanners into planes and into rural ambulances, so we're trying to develop

much lighter-weight instruments.

MD: What have your results been like so far? Do you have good data on the effectiveness of the stroke ambulance?

SD: It is effective. The best data we have is from Europe and the US where they've done what's called phase-three trials, where they've shown that treating people with a stroke ambulance improves stroke outcomes at three months. There's this concept of the golden hour. The first 60 minutes after stroke onset. About which not that much is known, because only one or two percent of people in hospitals can be treated within 60 minutes. But in the ambulance, we're treating about 18 per cent within 60 minutes, and we treat half of everyone within 90 minutes. With earlier treatment, you see much better outcomes.

MD: That's incredible. Is a helicopter the next frontier?

SD: Yeah, helicopter, planes, and upgrades to more standard ambulances. We're working with two companies to develop very lightweight imaging techniques. A company called EM Vision in Sydney with a microwave, electromagnetic radiation, like your mobile phone; and one in Adelaide called Micro X, who have a very novel lightweight type of CT brain scanner, reducing the weight from, say, 500 kilograms, down to less than 100.

MD: That's amazing. You've had a pretty stellar career, you're 72, you're still working full-time. Do you have any ideas about what might be the secret to longevity and the ability to work until a good age? Because you come across basically as a 40- or 50-year-old. I'm curious about your reflections on why that might be, or what's worked well for you.

SD: Well, firstly, I don't really feel like ... I'd love to feel like a 40 or 50-year-old. I don't know, maybe it's fear of the unknown. I've got other interests. I like travel, I like movies, I like reading. I like to keep reasonably fit. I still enjoy what I do. I guess working with young people is very stimulating. Working with my colleagues at the hospital and university is very stimulating. I'm quite privileged to be allowed, in a way, to keep working.

MD: Do you think that work, continual work at quite a high level, has kind of made you almost flip the trap a little bit? Because you often see a lot of people when they stop work, they start aging rapidly.

SD: Yeah, I see it with my patients. I don't know, Mike, look, I take it day by day, week by week. At the moment it's working for me and maybe one day it won't work.

MD: You'll probably have to pick up a hobby if you decide to slow down. Like you might have to seriously try hard to get into golf.

SD: Tennis, I'd love to get back to. But one thing with aging is the joints deteriorate. We can dissolve blood clots in the brain, joints can be replaced, but we need a drug to lubricate them.

MD: I want to ask you your thoughts on the advent of personalised medicine, and where things are in terms of the potential to treat people based on their own individual biology and circumstance. Are we at that stage?

SD: That's huge. Yeah, we are at that stage. We particularly rely on brain imaging to personalise the treatment we give in stroke, so that's been a very big adaptation of that concept. I think the era of personalised, individualised, medicine is very much with us. It's interesting in the stroke field. There have been trials based on personalised medicine, say with imaging, and other concepts; and also big picture, just treat everyone with this and you get improvements. And both concepts have some validity. So, there are some general things, like we know in stroke for example that keeping the blood sugar at a certain level works across the board if you've got bleeding in the brain. But other concepts, quite individualised.

MD: Interesting. What about the next level, DNA sequencing and genomic research?

SD: We are there to some extent, and it's going to explode I think, with CRISPR and gene editing and these other techniques. I think back in medicine to where we were 40 years ago, and where we are now, where are we going to be in 40 years' time? This concept with computers, the half-life of new breakthroughs is 18 months, and I think in medicine we're seeing explosive developments.

MD: Will it be that you go to the chemist and you get pills made for you and your specific condition?

SD: I think that will happen and I think we have come a long way, but we still have to focus on the fact that for a lot of the world, the poverty that people live in, these are massive challenges that we haven't overcome and I think that tempers my enthusiasm for some of the more exciting advancements in medicine.

MD: With the amount of human problems we've got still as a global civilisation, it's a bit daunting to be thinking about big leaps in technology, given we can't even fix global poverty.

Photograph: Alexander Popov

SD: Well, that's correct, although I guess if you take the glass half full view, there's much less famine than there used to be, we're feeding people better. I'm a bit of an optimist when it comes to science helping food production. We've obviously got to cope with the challenges of global warming, but I think we probably can. But yes, there's still a huge amount of suffering and that has to be addressed.

MD: What about switching off from things? You get emails from all around the world all the time. Do you have a practice in terms of the time that you don't email after?

SD: Very good question. I think it's best to turn off from electronics in the evening. Some do it a bit later, some do it a bit earlier. After dinner I prefer not to do any email. I avoid the computer, avoid looking at the phone too much, and I switch off. I prefer reading, watching TV, talking to my wife.

MD: You clearly understand the deleterious effects that technology can have on you if you don't switch off. Do you kind of apply the same logic as to why you're not on social media?

SD: Well, I've been on that old-fashioned technology Facebook. I'm not that averse to social media. I just don't seem to have time to even cope with what I've got to do in life, with email. I know some friends of my age are very into Twitter, for example, and enjoy it, but it's more of a time constraint.

MD: I think people spend way too much of their lives on social media.

SD: I think sometimes it's better to just go and have a coffee with someone, actually.

MD: Well, much better. If you look at the evidence around social connection and the benefits for wellbeing, they've been able to show that the more time you spend on social media, the more likely you are to become depressed.

MD: How necessary is it for you, as you've got a bit of

a public profile and a research profile, to keep up your social media presence?

SD: That's a good question. I don't focus on it. We have this company, Australian Stroke Alliance, and we have publicity people that keep a social media presence of what we're doing with our research. To be honest I don't get too involved with it. I sometimes feel I should be more involved with it, but then I go and read a book or switch off.

MD: You said you've been reading Obama's book. What would be the best book you've read this year?

SD: That's a very, very difficult question. I think the Obama book's actually very interesting.

MD: Is it better than MBS?

SD: MBS was amazing. This was a book that you put me onto about Muhammad bin Salmon and the story of Saudi Arabia, and some of the kind of changes in that society. The way he handled his family was rather unique. Put them all up at the Ritz-Carlton but not in a voluntary way. That was an amazing book. I always have three or four books next to the bed and I flip between them a bit. I mainly read on the iPad now because I just find it easier, although I like hard copy books.

MD: Lifestyle wise you're still walking every day? How long do you walk for?

SD: Yep. Most days. About 45 minutes. I just try and do a brisk walk.

MD: And what do you listen to when you walk?

SD: I usually listen to music or talk back or something light. Something that's not too intrusive. I got into podcasts for a while.

MD: One thing you got to do that I thought was super cool was you got invited to the Vatican for a conference on what happens to the soul after brain death?

SD: That was fascinating. That was one of the most interesting events of my life. I was invited as part of a group of neurologists, in particular to work out what is brain death. The new pope had just come in and there was questioning of brain death as a concept of death, which was very important in terms of transplantation. It was lead by Alan Roper who you know, and one of the cardinals. And the question was when does death occur? People in intensive care can have no brain function, but if they're ventilated, if they've got a breathing tube and a machine to help ventilate them, the kidneys still work, the nails still grow, the liver works, their blood chemistry can be stabilised. So, there are some facets of what you might call life, but there's no brain function. It's virtually universally accepted in medicine that brain death is death. But it was challenged by an American doctor who wrote in Journal of Neurology and recorded, say, 160 cases where there was brain death but people still had evidence of what he called life. This was a two or three-day conference, and ended up with complete agreement that brain death was death, and that this wasn't in conflict with Catholic theology.

MD: What are you looking forward to most in the next few years?

SD: What am I looking forward to? Look, I guess health for all of us. For me and my family.

MD: Skiing?

SD: Skiing, yeah. I hope to get back to skiing. As you know, I had a knee replacement, and the orthopedic surgeon is not keen that I ski again. I've had lens implants. I've had my teeth done. But as one of my friends in Germany said, because he had cataracts come out and he can now see perfectly: 'One disability down, 20,000 to go.'

MD: Many more things to replace. Exciting times. Amazing catching up with you. How can people connect with you and learn more about your work?

SD: The Australian Stroke Alliance website will tell you what we're doing currently with our light-weight brain imaging. If they Google it they'll get to the website. The Melbourne Brain Center at the Royal Melbourne is where I hang out. They can see there's a range of research activities. Can I just say it's been a real thrill and pleasure?

MD: It's been a pleasure having you.

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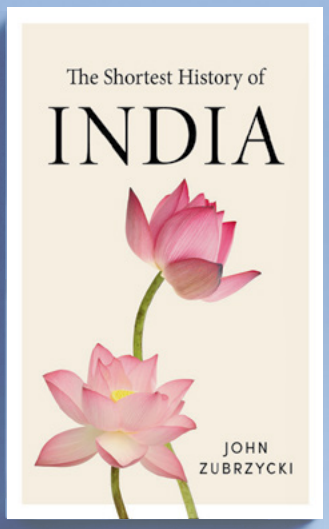

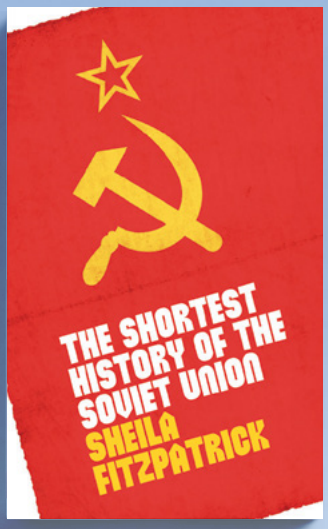

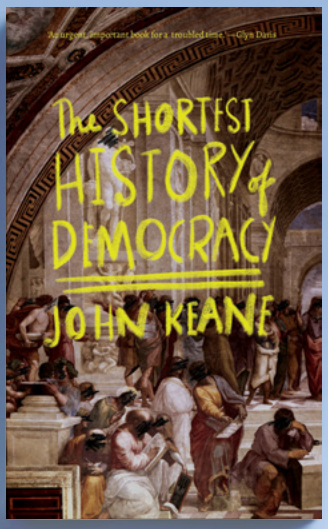

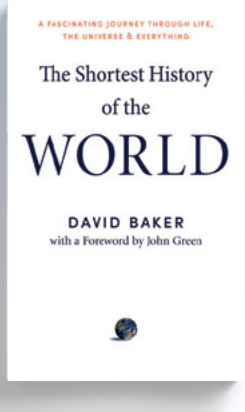

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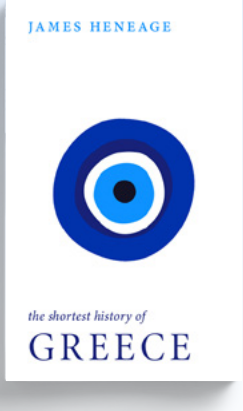

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