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THE PODCAST READER

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WELCOME TO

THE PODCAST READER

Welcome to Issue Two of *The Podcast Reader,* a new publication for those who are curious and open to new ideas, featuring selected transcripts of the world's best longform podcasts. From the overwhelming volume of podcast content, we've chosen the highlights for you – recent instalments to keep you up to date and some timeless episodes from the channels' back catalogues.

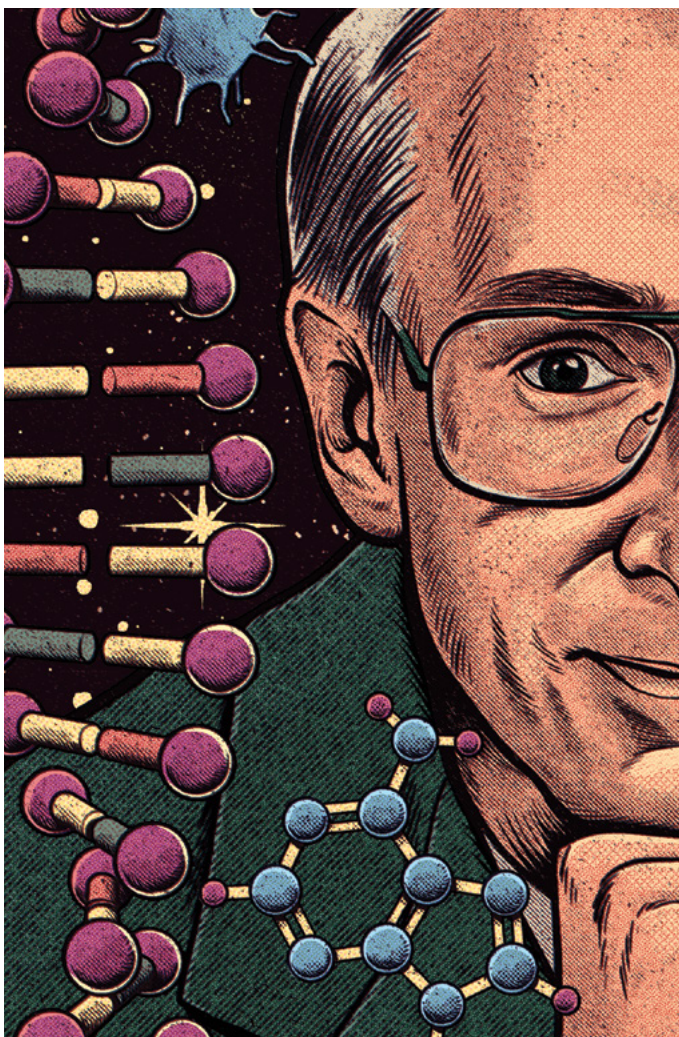
Longform podcasts provide a new and different platform for exploring the ideas that run our world, but they're underappreciated and under-exposed. It's easy to be distracted when listening to them. Interesting details can be missed, especially when episodes are long, and if you're finding part of a conversation uninteresting, there are no practical ways to 'skim' the material. Our printed podcast transcripts make it easier to focus on key points and follow complex ideas.

We are grateful to the podcast channels that have agreed to join us for Issue Two – *The Jolly Swagman* with Joe Walker, *Conversations with Tyler* with Tyler Cowen, and *EconTalk* with Russ Roberts. Each are leaders and exemplars of this revival of the ancient art of the interview. We thank them for producing this extraordinary content, and for recognising that this material deserves a new and broader platform. *The Podcast Reader* has been created to support their important work.

In this issue, we present two Joe Walker interviews with two very different revolutionaries: Mark Cuban on innovation, business success and the art of selling, and ground-breaking evolutionary biologist, David Sloan Wilson, on multilevel selection theory and the effects of altruism and selfishness on human behaviour. Meanwhile, Tyler Cowen talks to Nordic author Karl Ove Knausgård about the writing process and Edvard Munch's influence on him. He also talks to Martina Navratilova about the challenges and triumphs of her glittering tennis career. Finally, Russ Roberts speaks to Isabella Tree about her experience of restoring a natural landscape on her listed property in rural Sussex.

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.

Illustrations by: Ling (page 7), Pedro Correa (page 49), Vaughan Mossop (page 35 & cover), Janelle Barone (page 21), Michelle Pereira (page 69). Additional editorial illustrations by Vaughan Mossop.



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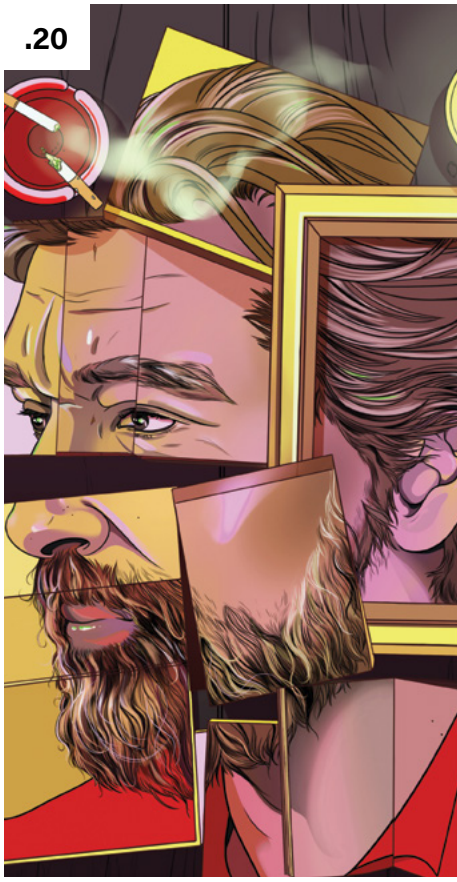

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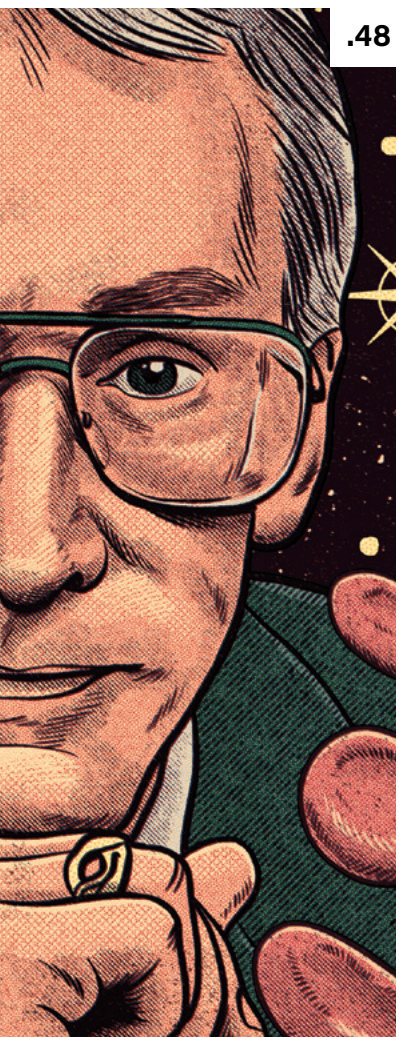

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> You can think of the power of an idea as being how much it explains divided by how much it assumes.

DAVID SLOAN WILSON

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THE PODCAST READER

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A MAVERICK WHO MADE IT

EVERYTHING'S A REMIX

MARK CUBAN
THE JOLLY SWAGMAN PODCAST
2021

Interview by Joe Walker
Illustration by Ling

Joe Walker: Mark Cuban, welcome to The Jolly Swagman Podcast. I asked myself, 'Who is Mark Cuban?', and I tried to answer that question. I'll give you my answer, and then you can add or subtract from it.

I think of you as very much a product of the working-class Jewish diaspora: hard-working, gritty, aspirational, optimistic. On your father's side, the Chabeniskys emigrated from Russia through Ellis Island, where your grandfather Morris changed the family name to Cuban. Your maternal grandparents, the Feldmans, were also Jewish, emigrating from Novoselytsia in Romania.

As you were growing up in Pittsburgh, your mum worked a rotation of odd jobs. Your dad eventually worked in car upholstery for Regency Products. Your household was open-minded and aspirational, but not overly intellectual. There weren't many leather-bound books lying around, but your parents did read the daily newspaper. Your mum wanted you to have stability, but not necessarily fulfillment, and to get a job laying carpets because she feared that you mightn't get enough money together to make it into college. But you did make it in, to Indiana University, and she supported your decision.

Your working-class upbringing, years grinding it out at college in various jobs, combined with your Jewish ancestry – especially the knowledge that one-quarter of your mum's family lost their lives during the Holocaust – enables you to empathise with struggling and marginalised people. You're not one of those guys who thought he hit a triple but was born on third base.

Despite, or because of, your own success, you never lost sight of the fact that luck plays an important role in people's lives – a very rare trait in a successful businessman. I see certain other things running through your life and career: optimism and assertiveness. I spoke to someone who used to speak with you when they were researching Gandalf Technologies when you were a value-added reseller, and this person said even then you were a straight shooter who didn't suffer fools.

A focus on hard work. A keen understanding of the extra 2 per cent, and the power of searching for little edges to turn good businesses into very good businesses and very good businesses into great businesses. And the attribute of intellectual fearlessness. You back yourself to master any new field given enough work, from running Motley's during college, helping a basketball team to an NBA championship and hopefully many more, and learning how a law firm operates, to teaching yourself to code, learning about machine learning, and getting an A in graduate-level statistics in your first year at college. Through all of these experiences, you learned that you can take intellectual chances. In a nutshell, you're a figure who personifies what many people consider to be the American dream. So now you can tell me, how did I do? Who is Mark Cuban?


-LING-

Mark Cuban: You did pretty well. I mean, you probably could do a better job of describing him than I could. So, I'm going with you. Now when everybody asks me, 'Who's Mark Cuban?', I'm just going to play the podcast and say, 'I don't need to say it, Joseph said it best.'

JW: In preparing for this conversation, I got in touch with Wayne Winston, your old statistics professor at Indiana University, who also did some work for you at the Mavs. I asked Wayne, 'What's the most underrated thing about Mark as a businessman, the owner of a sports team, or as a person – something that he's really good at, but almost nobody knows about?' And Wayne said, 'He knows how to entertain customers. He learned that in college owning the best bar in town, Motley's.' So, what specifically did you learn about entertainment while you were running Motley's?

MC: I did not expect Wayne to say that. You learn that people work hard for their money, and they want something that makes it worth their time. People take the path of least resistance. You're either bored, you've got something you've got to do, or you don't want to be bored and want to end that boredom by finding something to do. And if you give people something that's really special and memorable, even if you're in college and it's just about getting drunk for the cheapest price, then people are going to take that path of least resistance and try to have some fun. So, he's right in a big respect. I learned back then that if you make it easy and cheap for people to have fun, they'll knock down a path to your door.

JW: Why is a Kamikaze a great shot?

MC: Because why isn't it? Of course it is. It's cheap. You can buy rotgut vodka and you've got lime juice. Mix them together. Why wouldn't you? Why wouldn't anybody every day?

JW: Do you know why that shot is called a Kamikaze?

MC: No, tell me.

JW: There are a couple of stories. I worked in a bar at college as well, and we used to serve Kamikazes. One story was that it was developed in Japan sometime after the First World War on a US naval base. And another story is that it comes from the ingredients – vodka, triple sec and lime juice, or VTL: Very Tragic Landing.

MC: First of all, only the high-end bars put in triple sec. College bars don't even have triple sec. You guys are living the high life.

JW: Well, if you ever make it down to Sydney again, we can have a Kamikaze together.

MC: Definitely, or ten.

JW: I want to talk a little bit more about entertainment, but moving into movies now. The key challenge for Magnolia Pictures, the film distribution company you own, is how to bring in more at the box office than it spends getting people to theatres in the first place. So, a question about movies if I can, but I want to start in a roundabout way.

The funny thing about innovation is that it's inherently unpredictable, because if a new technology could be predicted, then it would've already been invented. And that's why, as Alan Kaye says, who you quote in your book *How to Win at the Sport of Business*, 'The best way to predict the future is to invent it.' But extending that idea to Hollywood, every new movie, we can think of that as an innovation, and it's never certain in advance which one's going to be a hit with audiences.

I want to read a quote from veteran Hollywood screenwriter William Goldman. He says that '*Raiders of the Lost Ark* was offered to every single studio in town, and they all turned it down except Paramount. Why did Paramount say yes? Because nobody knows anything. And why did all the other studios say no? Because nobody knows anything. And why did Universal, the mightiest studio of all, pass on *Star Wars*? Because nobody, nobody – not now, not ever – knows the least goddamned thing about what is or isn't going to work at the box office.' So, can a movie company systematically produce hits?

MC: Well, it's different now. What's a hit today is different than it was back in the day, because back in the day you wanted to go to a theatre. Now, you're probably not going to see it in a theatre. You're going to see it on Netflix or Amazon or whatever. But systematically, it's hard. And it's not even so much about picking a good script, it's that you just don't know how all the pieces are going to work together.

If they would've picked anyone else to be the lead other than Harrison Ford, it might not have worked. If they would've picked anybody else to direct it other than Steven Spielberg, it might not have worked. So, it's not just about being able to say that's the script, that's the cast. You also need the producer and the director. And then, you also need the right timing. What else is coming out? What's going on in the world at that point? Do people want to escape? Do they want something serious?

It's like anything else: luck is always more important. I'll give you a quick story on picking

movies. In 2003, we created HDNet Films and 2929 Pictures, and the idea was that we were going to produce movies because we owned Landmark Theaters, we owned HDNet, a high-definition television network, the first high-definition television network, and we had Magnolia produce. That way we're all vertically integrated.

So, while we're going through this whole process, I get an email from a guy named Alex Gibney. Alex Gibney – nobody really had heard of him – he goes, 'I've got all this video on Enron.' Remember the company that blew up and it was a big scandal? And I email him back, 'Is it exclusive, you guys own the rights?' He emails me back, 'Yeah.' And I go, 'So how much is it going to cost to produce this documentary?' He goes, '$770,000.' I said, 'Let's do it.' It took 12 minutes to green-light this documentary. It's called *Enron: The Smartest Guys in the Room*. At the time, it was one of the top-grossing documentaries of all time, and it got nominated for an Academy Award for Best Documentary. Unfortunately, we didn't win.

Next movie comes along. My partner Todd Wagner gets this movie and it's in black and white, but it's got George Clooney. They wanted us to pay half of the production budget and our half was going to be $4 million. Turns into a movie called *Good Night and Good Luck*, gets nominated for six Academy Awards. Doesn't win any of them, but gets nominated.

So, the first two movies Todd and I, and in the case of Enron just me, green-lit, got nominated for seven Academy Awards, and I'm thinking this shit is easy, right? I've got a feel for this. You don't know one more movie that we did that came after that. I mean literally I'm going to the Academy Awards, I'm walking like this, people are coming to me thinking, 'You got the touch, you guys know what you're doing, you and Todd. We want to work with you.' It went straight into the shitter right after that, that's how hard movies are.

JW: It's like with business – you can't even ask your customers what they want. They know it when they see it. There's a great quote by the economist Bill Easterly. He says, 'We thought we wanted Halle Berry in *Catwoman* in 2004, which was later named the worst movie of the year, but what we really wanted was Anne Hathaway playing Catwoman in *The Dark Knight Rises* in 2012, which was the box office champion of the year.'

MC: When people were using horses and carts and buggies, they weren't asking for cars. When we started Audionet, nobody knew what streaming was. It was called 'internet broadcasting' at the time. I would tell people, 'Look, you got a PC, you got a modem, you download these two pieces of software, and then you go to this website called audionet.com. And we'll let you listen to all these radio stations and then all this music.' And they're like, 'Bro, I'll just turn on the motherfucking radio. Why do I need to go through all that hassle?'

I'm like, 'No, you don't understand. This is what's going to happen.' Like you said, if you just gave people what they want, we'd still be on horses and we'd still be listening to records.

JW: Bethany McLean is a former guest of the podcast and an acquaintance. I got in touch with her before this interview and asked her the same question I asked Wayne, and she said that, 'Mark was an excellent executive producer for *Enron: The Smartest Guys in the Room*.'

MC: Yeah, because I did nothing. I just said, 'You guys know more than me about all this. I'll write the cheques. I'll stay out of the way.'

JW: So, when you were talking a little bit earlier about what makes a movie successful and how it can be unpredictable, one of the things in your answer indicated that it's the combination of so many elements that makes the success of a movie hard to predict. Running with that theme for a moment, why is it harder to apply the *Moneyball* approach to basketball than it is to baseball?

MC: Because you can develop baseball players. It's hard to develop basketball players. With baseball, if you look at the top-draft picks, those aren't necessarily the stars. I'm sure it's the same in Australian Rules Football, right, because you can develop players. They're bringing down six foot eight dudes from the US to play Australian Rules Football because you can develop athletes.

In basketball, the number one pick in the draft, the top couple three picks in the draft, you typically know that those are going to be the best players and they're going to be some of the best players in the league. It's really rare when somebody goes undrafted and then becomes a superstar, or even an All-Star. So that's the difference. In baseball, Australian Rules Football, you can teach them.

In rugby, I played rugby for a long time, you can take an American footballer and teach him how to play rugby. You may not turn him into a scrum half, but he's going to be able to play eight or wing forward and it's not hard to teach him the rules. But you can turn him into a decent player because he's got that athletic ability. In basketball, you need that athletic ability and skill, and it's harder to develop.

JW: And then I guess there's the combinations between players as well?

MC: Yeah, that's what it takes to win a championship. It's one thing to have a great player, but you need a great team. They all have to want to play together, you have to have the team chemistry. Why are the All Blacks so good? They had a little downturn for a while.

JW: Rugby's one of my two favourite sports. What position did you play in rugby?

MC: I started off as second row, and then moved to wing forward, but I really liked to play eight the best because I could pick up the ball more and run, and just wave off the scrum half and say I'm keeping this shit and going with it.

JW: I did a bit of work trying to understand your views on Google and YouTube, and I went back through your old blog posts from 2006, '07, '08, and '09 in particular. And around 2006, you thought that Google would be crazy to buy YouTube, and then when they did buy YouTube you thought that the YouTube guys should sell and run, similar to what you did when Yahoo! bought Broadcast.com because it was very different times back then. YouTube wasn't monetised. It was bleeding huge bandwidth costs.

A few questions around that if I may. First, why do you think it is that Broadcast.com became the dodo and YouTube is now an irrevocable part of our culture? It's not because Broadcast.com had bad management and YouTube didn't. Is it just timing?

MC: No, it was bad management. When Yahoo! took over, once the internet stock market popped, they basically closed it down. We were about break-even. Like you probably read, we were Pandora, we were Spotify, we were YouTube. We were getting millions of visitors. And then in 2001, basically Yahoo!'s board said, 'Enough is enough. We've got to focus on being a search engine,' and that opened the door for YouTube. When I was ripping on YouTube, it was more about the legal side of it. One of the things that Broadcast.com always did was really respect copyright laws. Our attitude was if a user posted something, because we had user uploads, we had to make sure they owned the copyright to it. YouTube worked and said the exact opposite, 'We don't care,' and they knew they were violating copyright law, but when Google got involved they had better lawyers than Viacom and Paramount and those guys. And if Viacom would've had good lawyers, it might've been a completely different story.

That was why I ripped on them because their whole business was built on the fact that the eff.org had told them that it's okay to have user-generated content that you don't have copyrights to, and all of our lawyers, our personal lawyers and Yahoo! as well but not just Yahoo!, told us the exact opposite. So, I think that was the bigger disconnect.

JW: Gotcha, so it was bad management. Back then, you thought Yahoo! was overvalued, so this is back before the dot-com bust. You thought it was overvalued because you understood bubbles. But did you still think Yahoo! would win the portal race?

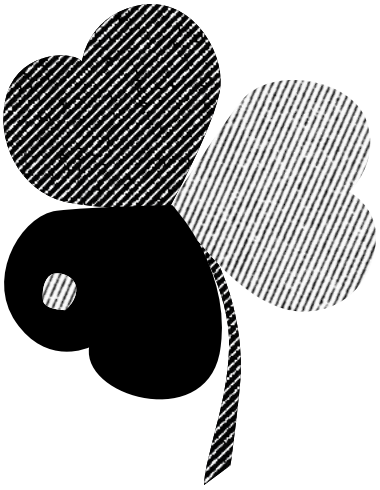
MC: Yeah, I did. And they should've. And if they would've kept Jerry Yang as the CEO, they probably would've. And I'll tell you another story behind that. I forget the name of the company, but they own the patent to pay-per-click for advertising, which is the whole fundamental underpinning of advertising for Google and all search engines. They bought that company, so Yahoo! owned that.

And when Google started to grow, they sued Google. Smart move. The dumb move was that they settled with Google, and rather than just saying no, which was not the way Yahoo! would do things back then – they were not into conflict whatsoever – they allowed Google to pay them $1 billion in stock, which seemed like a great deal, right, but it also allowed Google to survive. I mean they're super smart, maybe they would have been able to find workarounds and it would've been a non-issue, but it would've been a whole lot harder and Yahoo! would've been able to dominate.

But I remember going in there after they bought us and saying, 'Look, if we do this, this and this, we'll be able to dominate. These guys won't be able to compete with us. They're going to have problems.' And they're like, 'Mark, that's just not the way we do things.'

JW: Yahoo! bought Broadcast.com for $5.7 billion, and then you turned around and collared the stock. There are probably a few people in the world who timed the dot-com bubble better than Mark Cuban. I'm curious is it possible to learn a sense of timing around technology and market bubbles more generally? Or is it just luck?

MC: No, you learn very quickly not to time it. And number two, you learn not to be greedy. How much money did I need? That's what it was all about. It wasn't me trying to time it. I owned one-third of the company and we just sold it for $5.7 billion in stock. I was going to have to pay my taxes out of that, a shitload of taxes, but I was going to end up with more than $1 billion. So, I was like, 'Okay, collar this.' And not only did I collar it, before I was allowed to collar it because I had a six-month holding period, I spent $20-some million, every penny that I had, to buy puts on an internet index so that in the event it cratered before I was able to put the collar on,



Despite, or because of, your own success, you never lost sight of the fact that luck plays an important role in people's lives – a very rare trait in a successful businessman.

I would still make some money. I lost almost all my money on that put on the index, but it allowed me to do the collar, and it's been called one of the top ten trades of all time on Wall Street. So, it wasn't about timing it, it wasn't about luck. The lucky part was the way the market got so much more volatile, I actually made more money on the collar. It wasn't just protecting it, I made more money, and that was the lucky part.

JW: Looking at the current technology landscape, what do you think is the really important thing that we do now that's going to sound absurd in a few years' time?

MC: Blockchain and NFTs. AI doesn't sound absurd, it's kind of par for the course now. Precision medicine and the way we built the vaccine, MRNA vaccines, and how AI applied to that, that won't seem crazy. But the idea that we might not have pennies, nickels and quarters, or I don't know what the equivalent is in Australia. But the way we sell music and do podcasts like this. You'll mint them and you'll put them on the blockchain and you'll make them available to anybody either for free or to buy them depending on how they want to use it, and people will use some sort of – cryptocurrency isn't the right word, but – token in order to buy it.

All the things we were talking about from the early days of the internet, I'm seeing the exact same things happening with blockchain and all the different applications built around blockchain. The crazy part is we'll look back and say, 'All this happened because of the pandemic,' because so many people were able to stay home. A lot of people got stimulus cheques there, here and everywhere, and invested it in crypto and learned about decentralised finance and started making money that way. And once they started making money that way, they started exploring all the different edges of the blockchain and application on top of it. And it's just starting to blow up, and it makes perfect sense.

I'll give you an example of something I'm doing. If you go to a site, rarible.com, I've put up some little artwork things because I just want to learn about it. One of the things that was stunning when I did it, I put something up and I put it for 0.25 Ether, which was about $250 at the time and I put up ten of them thinking, 'Okay, who's going to be crazy enough to buy this little artwork stuff?' But that wasn't the interesting part. As I was minting it, going through the process of making it compatible, there were two check boxes. One was do you want to convey the copyright? I said no. The second one made me go, 'Oh my God, this is going to be game-changing.' And that was what percentage of license would you like every time it's sold? And I'm like, 'Wait, what are you telling me? That if it sells for more or people keep on buying it and selling it, I get paid every time?' And that's what it was. So, I put 10 per cent on the first one. The next thing I know, because it was my first thing that I put out there, there are people buying it and selling it back and forth, back and forth, back and forth, multiple times, and I'm getting 10 per cent of it every time and it was going up and up and up. One Ethereum, now it's $1,500, $1,700. Then it was 10 Ethereum. I'm selling like $100,000 worth, and I'm getting 10 per cent of that. Then I did another one, and it sold for even more, and I'm like, 'Oh my God.'

It's not so much that my artwork or my stuff is going to be incredible, but it's the fact that for the first

time ever something digital can be sold and resold and the original creator will keep on getting paid. So, for your podcast, if you, rather than just putting it out there and hosting it and allowing people to download, if you went onto one of these sites and said, 'Okay, it's free or it's 0.0001 Ethereum,' which is next to nothing, but allows you to track everybody who's out there. And if you want them to, they can resell it. And if you want to get paid every time they resell it, you're allowed to do that.

So, if everybody says, 'Oh my God, this podcast is just so fucking good. Here, I'm going to sell it to you or I'm going to give it to you,' you keep on getting paid. Now imagine that for a musician or a movie, right? There are just so many applications. Or you're a professional photographer, and rather than worrying about your artwork being stolen or your commercial photographs being stolen, you're okay with it being out there.

On top of that, with the blockchain, you get to track all of that and see who bought it, maybe not by name but their address, and it's just incredible. So, when you talk about what's the thing when we look back? All these people learned this shit because they were stuck at home. Not just me, but all these people involved, and it's growing exponentially, just like the early days of the internet.

We've been talking about all these business inflection points, right? When it comes to movies, what was it that you try to see, and how nobody knows anything? Then you asked me about selling, and how to entertain, and how to sell. When I saw that, it made me realise that anything that's digital now, you're going to be able to sell it forever and make money forever if it's good content. And that's just a game-changer for content producers. As you know, as someone with a podcast, it's hard to make money. You've got to get those sponsors. You try to do a great podcast, but you're completely dependent on somebody bringing you advertising dollars or maybe some sponsorships or whatever.

Imagine if you're able to take snippets or the whole thing or pictures or whatever and sell them just for pennies each time. And people are like, 'Cool, I'll give Joseph three cents just for listening to it,' as opposed to having to go through the whole tip thing and Patreon thing and all that. It just gets so simple and so different.

Add to that the fact that for Gen Z, in particular, the most valuable things they've ever had growing up are digital. They don't have houses. They're just getting cars. Cars depreciate. But the best stuff you own are your pictures, your music, your videos. That's you, and being able to buy and sell those things easily is natural. So, when we look back, the stuff that's crazy right now, we're going to say, 'This shit blew up and became enormous and important all because of the pandemic of 2020.' Sorry for the long answer, but you asked.

> If you just keep on doing what you've always done, then people are going to be able to see what you're doing and disrupt your business.

JW: I want to ask you about a couple of books that have had an influence in your life and thinking. The first one is *The Innovator's Dilemma* by Clayton Christensen, a classic business book. What did you take from that book?

MC: You've always got to check your hold card, right? You know when you're playing cards, even though you know you've got a seven underneath there, you always look ten times to make sure it's still a seven. No matter what you think about your business, you've always got to check again. You've always got to check your hold card to make sure that the things you built your business on are still applicable because there's always somebody out there trying to kick your ass.

That's why I called my book *How to Win at the Sport of Business*. Business is the ultimate sport because you're competing all the time. You don't know who else is competing with you. And there's always going to be somebody coming after you. You've always got to compete.

JW: For the benefit of people who haven't read the book, the dilemma that Christensen talks about is that all the things that make great businesses great – great management, listening to your customers, continuing to develop your product lines – are the very same things that make great businesses fail, because there are disruptive technologies, which are cheap and simple so the margins aren't great, and they only really please a very thin slice of the market.

MC: It's not even as much that as people get comfortable doing what works. If you're making a lot of money doing something, that's what you know and you want to keep on doing it. To your point, what he said was, 'If you just keep on doing what you've always done, then people are going to be able to see what you're doing and disrupt your business.'

And that's the innovator's dilemma, the dilemma of retaining your existing business versus innovating and moving forward knowing that you're going to have to give up some of that existing business because if you don't disrupt yourself, somebody else will do it for you, and you can see all that business disappear.

JW: You've also read, I believe, Michael Lewis's book *The Undoing Project*, about Daniel Kahneman and Amos Tversky?

MC: It was cool the way they approach solving problems and dealing with stress. I don't remember all the details of it, but my takeaway was you always have to look for the intellectual solution. And sometimes what you think is the obvious answer is not. Sometimes when you look at something straight up and you think you understand what you need, you're wrong.

He gave the examples of picking the right infantrymen and understanding who's going to be the best for certain types of positions, and how you find the best people. And the way they had always done it, to *The Innovator's Dilemma* thing, wasn't working. It's like one of the stories, I think it was from *The Signal and the Noise*, where they were trying to figure out the way to reduce the number of planes that were shot down during the Second World War. And when they were able to recover the wreckage, they always found that this part of the fuselage had the holes in it, and that must be why it's being shot down. Then this other guy comes in and says, 'That's not what we need to look at. We need to look at why are the planes that weren't shot down still flying? What were they doing? And we need to do more of that.' So sometimes the solution is not what you think is the most obvious solution.

JW: Can I tell you what I took from *The Undoing Project*?

MC: Sure, please do. You'll help me remember things.

JW: For me it was about the importance of partnerships and how they succeed, and also how they fall apart. One of the quotes in the book is 'We're both geniuses, but together we're exceptional.' They were like the Lennon and McCartney of academic psychology, and then all their insights eventually became behavioural economics. But I would kill to have the sort of intellectual bromance with someone that Kahneman and Tversky had with each other.

MC: It's interesting because they had a falling out, because sustaining those types of relationships is hard because everybody wants to take ownership, everybody's got their own personal goals. People grow up differently, and so it's hard to sustain those types of relationships.

JW: Exactly, and theirs fell apart. I think there are two ways partnerships can fall apart. One is you both have equal input, but you get unequal credit. And the other is you have unequal input, but you get equal credit. And that starts to cause tensions. Theirs fell apart because their input was equal, but Tversky was getting all the recognition and Kahneman wasn't, so that started to grate.

MC: I've had partners in my businesses and we're all different personalities. When you go in, people have different goals. You don't really know what the end of the movie's going to look like. As you go through these things, what you expect to happen varies from what actually happens. So, the one guy who wasn't getting the credit wasn't looking for credit until he saw how people were responding to what was going on. Then it became, 'Well maybe I do want some of this credit, and maybe this is interesting to me.' And because you don't know what Act Two and Act Three are going to be, and then what the end of the movie's going to look like, when you get there sometimes you're surprised and disappointed, or feel left out. I think that happens a lot with partnerships. We see it on *Shark Tank*, where somebody thinks this is the way things are supposed to work. But as the business grows and you enter different parts of the lifecycle of the business, what you expected is not what actually happened, and that's where you get a lot of conflict.

JW: The two key business partners in your life have been Martin Woodall and Todd Wagner. What about those relationships made them so successful?

MC: They were the exact opposite of me. Martin and Todd were both incredibly anal, incredibly detail-driven. I'm ready fire aim,' and they are 'no, ready, are we sure we're ready, let's check everything, let's

look at the details.' I talked about Broadcast.com, and this wasn't Toddy specifically, but when it came to copyright laws, I would've asked for forgiveness after the fact. And they were: 'No, if we want to build this business and go public and really make a splash in the public markets, we don't want this overhang.' That made perfect sense. Whereas YouTube took the exact opposite approach.

JW: By the way, *The Undoing Project* has the best ending of any non-fiction book I've read, so possibly something Magnolia Pictures could pick up and turn into a movie.
MC: Well, when somebody does, we'll let somebody else turn it into the movie because you know how good we are at doing movies.

JW: Third and final book question. I understand you've been learning about machine learning and you've read *The Master Algorithm* by Pedro Domingos, which convinced you that it was prime time for AI. And you've also been reading *Machine Learning for Dummies*.

MC: It's in my bathroom, yeah.

JW: Funnily enough, my last guest on the podcast was Frank Wilczek, and he's also teaching himself machine learning. And his machine learning books were in the bathroom. He went and got them during the podcast. Frank won the Nobel Prize in physics in 2004 for the discovery of asymptotic freedom and the strong interaction. The three books he recommends are *Reinforcement Learning: An Introduction*, by Sutton and Barto; *Deep Learning* by Goodfellow, Bengio, and Courville; and *Information Theory: Inference and Learning Algorithms* by David MacKay.

MC: There you go. It's hard to read those books. Videos are a lot better. I've gotten into the habit when it comes to AI-related things, I'm switching to videos and courses more because it's brutal to try to read those books.

JW: It is. Can you use R or Python?

MC: Yeah, I've used Python for sure. I was never big on R because I didn't have to do a lot of statistical stuff before I started doing machine learning, and then Python became the way.

JW: I've got two more business-related questions, and then I'd like to move to politics. The first business-related question is you are one of the best salesmen out there, what do people most commonly get wrong about sales?

MC: They think that sales is about convincing. 'I want to sell ice to Eskimos.' That's not sales at all. Sales is about believing in your product, and based off of what you know about your product, or service, helping people. What does my prospect need and what can I provide to them to turn them into a customer? It's that easy. The more people you connect with, the more people you're going to be able to help. If you love your product, it's easy to sell. Where you run into problems is when people don't believe enough in their product and they think they have to convince somebody.

JW: Do you have any tips for good cold pitches, especially by email, which is one of the hardest ones?

MC: Well, you've got to do your preparation first. I can sell to almost any type of company because I understand the needs of most types of companies. I just ask myself, if I'm the CEO or if I'm the person I'm trying to sell to, 'What do I need? What makes my life easier? How can I reduce my stress?' And once I understand how I can make their life easier and reduce their stress, then I understand how to format an email. 'I read this about your company and I recognise that you guys are running into some challenges with this. This has got to be driving you crazy. I don't mean to intrude, but if you just want to take a look and read this, it'll take you six minutes. And then if you don't mind, I'll follow up with another email and answer any questions you have.

JW: The biggest thing in that example you just gave was empathy, in my opinion. A lot of people have no empathy when they reach out. I am starting to get more and more inbound now about the podcast, and some of the questions I get from people are like 'I would not want to have a beer with this person at the pub'. If you don't pass that test…

MC: I agree.

JW: Don't come across as super needy. Recognise that people are busy.

MC: Yeah, just try to help. Like you said, empathy, helping, they're the same thing. You're not going to help somebody unless you feel empathy for them, right? And so, find a way. But it also shows that you're authentic when you do the work to understand what their needs are.

So, if I'm just shooting you a blank email, 'Hey we sell this. If you need this, reply.' Unless you just happen to get lucky and play the numbers game, 'Oh by the way, we just fired our last vendor and your timing's perfect,' that's just not going to work. You've got to have a sense of, 'I'm committed to finding out

about what you need so I can help you.'

JW: My understanding is that you don't believe the current stock market is in a bubble because interest rates are so low. Are we setting ourselves up for a bubble, and how will we know when the market does become a bubble?

MC: So, two things there. One, is it really a bubble when interest rates are about 1 per cent and you've got so much cash going in? To me, that's not really a bubble. We can argue if it's overvalued or not. But the reality is that cash has got to go somewhere. That's why you see a lot of assets going up in price significantly, because where else are you going to put it? Not under your mattress. So that's part one.

To me, a true bubble is when people get excited and buy things and they don't know why. They just buy things because everybody else is buying them. That's a bubble. Early in the internet stock market frenzy, I would get in a cab and you'd hear somebody talking in a foreign language and you'd just hear the names in English of the internet stocks that they were buying and selling. Or people would find out what I did and would just pepper me with questions: 'Should I buy and sell?'.

You saw some of that with all the craziness with GameStop and some others. There were people who bought and sold because they knew what they were doing. There were people who bought and sold because it was part of a collective and they wanted to do it because they believed in doing this together. And then there were people who had no idea that that other stuff was going on, they just bought and sold because their friends were buying and selling, and there was no connection to the Reddit stuff at all.

JW: Three questions about politics, and I promise it's not going to be 'Are you running for president?'

MC: Thank you.

JW: First question, what is your model of Donald Trump and how has it changed over the years?

MC: Just not a lot of respect. Fun guy, interesting guy to talk to, and it hasn't changed at all over the years.

JW: Really? Okay.

MC: Yeah.

JW: Did you detect something a bit off the first few times you met him?

MC: Yeah. Donald is just Donald, right? He's hyperbole. He's a salesman. It's all about him. No self-awareness. It's all about him. Always selling. It's all about him.

I'll tell you a quick story, and I'm sure you've read it since you've done so much homework. I was at a Superbowl party in 2001, right after we had sold to Yahoo!, and it was at Mar-a-Lago. Beautiful place. It was one of these deals where a friend of mine got invited and he invited me. And we're standing at these tables right by his pool, and there's a veranda in the club and there's people sitting up there eating.

He's being the typical host. There's the Hawaiian tropical girls all dressed the same walking around on one side of the pool, and then there's Donald coming over and saying hi to everybody. And he gets introduced, no big deal, and he looks at me and he goes, 'You know Mark, someday you'll be able to sit up there with the rich people.' And I'm like, 'Dude, you're the one going broke.' I didn't say this, but I'm thinking to myself, 'You're the one going broke.'

So, part two. My friend then tells him the circumstances. So, Donald gets a hold of me and I go to New York to his office in Trump Tower. I'm sitting there waiting and I'm looking around at his office. Every inch of every wall is covered with pictures of him, sometimes with other people, sometimes on covers of magazines, sometimes just pictures of him. Then he brings me in and we start talking about the internet and he wants to sell this, this and this.

I'm like, 'Don't waste your time. Don't waste your money,' and that was the end of it. But I got back on my laptop and I immediately sent an email that I still have to all my friends. And I said, 'Look, if I'm ever famous and people know who I am, smack the shit out of me if you ever see me acting like this guy because he had pictures all over the place of himself.' But that's who he was then and that's who he is now. It hasn't changed. It's all about me, everybody else be damned, and he's just not very bright. That's Donald Trump.

JW: What's it like getting an email from Donald Trump?

MC: Well he never sends an email because he never really uses the computer, so you get one from his assistant. What they do is he'll write something on a piece of paper, they'll scan it, and then they'll send it as an attachment. 'Hey, the boss is sending you an email.' And I'm like oh cool, and then you look at the PDF.

JW: My mate actually got a cold pitch from someone recently and it was like that. It was a scanned, handwritten note. And he was like, 'That's actually not a bad tactic because it's quite personalised.' It's different.

MC: In some respects, yes, but to me I'd be afraid that there's a virus in it. Otherwise, if it wasn't from Trump, I'd be kind of concerned to open it. But yeah, I mean anything that makes you stand out is not a bad thing.

JW: One of the themes I've been stressing on the podcast recently is the importance of taking seriously the concerns of the people who voted for Trump. When we have things like deaths of despair occurring at a tragic scale in America, when the white working class has just been gutted and hollowed out, we have to have empathy for these people. And a couple of people I've had on the podcast: Arlie Hochschild who wrote *Strangers in Their Own Land*, and Angus Deaton who co-wrote *Deaths of Despair*. At the same time, we need to acknowledge that Trump isn't normal and that it's possible to despise Trump but also to empathise with the movement that led to his election.

MC: Yep.

JW: But I noticed that you wrote a forward for a book, I think it was called *White Working Class* by an academic. Maybe you could just talk a little bit about how you understand the current predicament of the white working class in America and what you think the best thing for them would be?

MC: There was a book I read in high school, and it was called *Why Men Rebel*, and basically what it says is when your expectations for your life are like this, like we talked about partnerships, this is how I see the arc of my life going and then this is reality, or maybe there's even a downturn. That delta, when it gets wide enough, that's why people rebel. Because what have you got to lose? The whole vision that I had for my life has just gone haywire and gone completely in a different direction.

When somebody at least gives me some hope that they understand, that they get it, that they're one of us, then I don't even care about anybody else. Now, I might drape myself in patriotism and say, 'Well there's so many people like me. We're the majority. So it must be the patriotic thing to do since you're doing it for the most number of my fellow citizens.' And you have to recognise that.

I'll go on Fox News, Rupert Murdoch properties, and people are like, 'Why are you going there?' I'm like, 'Because I don't need to talk to people who think like me or have the same perspectives as me. I need to learn from people who are different than me. I need to speak to people who are different to me.' 'Why are you meeting with Trump? Why are you talking to this guy or that guy?' Because I want to hear from people who are different.

To answer your question, that's what's needed. You need somebody who's going to go sit down with the people that hate you, that disagree with you, that think you're a communist, that think you're a socialist, that think you're whatever it is that they've been told is absolutely wrong with you, and why you're the worst thing in the world for the American people. By doing that, to your point, that little bit of empathy. That little bit of connection. People don't want to hate people. People don't want to disagree with people. People want to have a commonality.

That's why Trump got elected. It wasn't like they believed in Donald Trump. He was the only one speaking to them. Donald Trump didn't create a movement. He found a movement that was already there waiting to be picked up.

If you have empathy with those people, it's not about programs, it's not about the specialised thing, and it took me a while to figure this out. It's not about, 'This is what they need, let me tell you what they need,' and then help get that for them. That's the intellectual approach. It's really just listening more than anything else. Once you listen, then they trust. Once they trust, then maybe you can help them. Maybe they don't need help. But they'll decide and they'll tell you. I think that's the missing component in all of politics, in your country as well as ours. I talked to Andrew Bogut, I don't know if you know Bogie at all, but he's all about conspiracy theories and right-wing politics in Australia, and so I get to follow his Twitter feed and see what's going on there some.

It's the same thing: you've got to be able to communicate, show empathy. But the problem is right now the way our representative democracy is, because we have primaries first, it's the people who are the most extreme that vote in the primaries because we don't get the turnouts that you do in the regular election. So, you've got 10 per cent of the turnout. The people that provide money are the ones that are the furthest to the extremes both on the right and left, and so our politicians have to pander to those most extreme people. That feeds off itself because if it works for you in the primary, you've got to stay true, a little bit at least, even in the US, to who you were, and that just grows and creates its own continuing set of problems where we're eating ourselves from the inside. That partisanship, the way we're set up with the duopoly of Republicans and Democrats, it's going to be a problem for a long time, because until we have independents represented in this country so that nobody can dominate – you don't have two parties fighting for power in a duopoly, you have three or four – we're going to have challenges.

I think the person to come and show that empathy, and sit down with people, not just Trump voters but it could be far-left voters, very progressive, Bernie

Sanders voters, because they're not far from each other. You go full circle from the other side and they come really, really close. But you've got to listen to them. You've got to show empathy. You've got to really recognise who they are and what they want, and it's not all about stuff and programs.

JW: Amen. Is a third political party something that you might be interested in starting?

MC: No, because of what you said earlier about partnerships. Expectations, when you come in together, are to beat the other guy. But then as you grow a third party or fourth party or fifth party, internally all the power dynamics still take place. Just like the partnership in Michael's book. Initially it was all great because they were on the same team trying to accomplish the same goals, but then they had their own interests that took place. The exact same thing is going to happen with the party, or two or three or four parties.

Now you'll get a benefit from diluting the power from just the two, but you're not going to solve the problem. To me, ranked choice voting, which allows you to have more candidates where you diminish the primary aspect that I just mentioned so that you can have more candidates … I support a group here in the US called The Center for Competitive Democracy, and all we do is sue states and municipalities that try to keep independents off the ballot, or small parties off the ballot. We just sue the shit out of them and get those people on the ballot so they have a chance to win.

We'll keep on doing more of that because that's what we need. I think we need independent voices because then they can represent the issues that are important to them, and what they think are important to their constituents. And instead of being a Trump Republican or a traditional Republican or a progressive versus a liberal, it's just here are people that represent these different interests, who are you going to vote for? What do we need parties for at all?

If I was going to do one thing, I'd make parties illegal because all the things that they were good for – communications, creating commonality in terms of approach, having joint applications like ActBlue to raise money, or whatever – we don't need those things anymore. Those things are available to everybody, and so all you do is get a false sense of homogenous or monolithic thought processes to try to say everybody's on the same page, when they're not.

Just the fact in the US that we talk about 'the Democrats won the Senate and they already have the House'. And the presumption is even though it's fifty-fifty in our Senate, that all the Democrats and all the Republicans are going to vote unilaterally. They're all going to vote the same way. Just think about what that means. All the constituents of all those politicians don't all have the same positions, yet they're expected to vote the same way for party unity so we can get these things done. That's wrong. That's wrong in every way, shape and form. So, I would get rid of all the parties. But that's not going to happen. So rather than trying to create a third party and just have it create more problems, I'd rather just support independent candidates. There are some projects out there for the equivalent of ActBlue to raise money and to get people on ballots and to support them that you can do now on the internet.

Look, if Wall Street Bets can get hundreds of thousands of people to buy and trade one stock independently, then you can probably independently rally support around a candidate that really stands up for the people.

JW: Wayne Winston mentioned that you were a fan of Australia's ranked-choice voting system. And for people who aren't familiar, it allows voters to rank candidates by preference, meaning you can submit ballots that list not only your first-choice candidate for a position but also your second, third choice, so on. What are the merits of that system in your opinion?

MC: The merit is I don't have to pander to a small group of people. Like I mentioned in the traditional primary system, it's the most extreme people that vote in the primaries and the turnouts are so low that the majority of the voters in the primaries are extreme. So that pushes people to the edges. Then on top of that, you hear the story a lot like when people talked about me running for president, 'Well you're going to pull votes away from so and so. You're going to pull votes away from this candidate or that candidate, so don't run.' In ranked-choice voting, that doesn't happen. So, if Joseph is your first choice and Mark Cuban is your second, and Donald Trump is your third and Joe Biden is your fourth, you just order them in that order, and then they just knock off the lowest-vote getter at the bottom and then push your choices up. So, if Joe Biden gets knocked up, then his first choice gets the votes and then you move through until somebody gets more than 50 per cent. That's the way it should be. We're starting to see that in the mayoral race in New York. And people get a better feel for it. Do you like the way it works down there?

JW: Yeah, I do. The other thing we have which is unique is compulsory voting.

MC: That's interesting.

JW: So, if you don't go up to vote and you're registered, you'll get a fine. But it's only like 80 bucks or something, I can't remember.

MC: Still.

JW: But there's huge turnout in our elections, like 90 per cent plus.

MC: See in the US, people would revolt over that. I mean we tried to fine people for not signing up for insurance so that they would have healthcare protection, and it was just a revolt.

JW: Well, the other thing about compulsory voting is that political parties and political leaders can't pander to the extremes. You have to win the centre because everyone's going out to vote. We find it works for us, but I don't want to lecture anyone about their systems.

MC: No, that's okay. That's the thing about democracy. Hopefully you learn and you evolve. That's why our constitution has amendments.

JW: Yeah, exactly. In 2008 and 2009, you invested a lot of money into Australian bonds as a play on China. The Australian economy is sometimes characterised as being based on houses and holes, that is real estate and mining. When you did your homework on the Australian economy, what did you learn about us? And can you elaborate a bit more on the thesis you held about Australia back then?

MC: It was paying 12.5 per cent for the bonds, and your business with China was booming, and we were in the Great Recession. I figured that your proximity to China was going to sustain your economy, which it did, and that I was going to be able to either continue to earn my 12 per cent or watch the bonds appreciate. And as it turns out, I just held them to maturity and just kept on earning my 12.5 per cent.

Where I learned the most about Australia is, one, my partner on *Dancing with the Stars*, Kim Johnson, is Australian. And then, I had Andrew Bogut and now we have Ryan Broekhoff and Josh Green. Ryan and Josh just got named to the Australian Basketball Olympic team, so congrats, good on you guys. But that's my understanding of Australia.

JW: Nice.

MC: And I argue with people about Australian Rules Football versus Rugby Union. I mean it's an easy argument to win. All this stuff versus real rugby? It's no comparison.

JW: I'm glad you've come down on the right side of the debate. The two topics or themes that recur a lot on this podcast are number one, asset price bubbles, especially housing bubbles, and number two, innovation. There are several ways those two topics are connected, but it was only recently while reading Friedrich Hayek that I struck on a deep link between bubbles and innovation. Because bubbles happen when people's thinking becomes correlated, whereas technology thrives on uncorrelated thinking. The way to think about that is that if innovation is the result of lots of different experiments by many individuals, and the odds of any one experiment finding a breakthrough technology are, say, one in 10,000, you can still beat those odds if you have 10,000 different individuals running different experiments. But the key word is *different* experiments. And the problem with a really conformist society – and this is true of countries around the world and also throughout history, like if you look at how Ming China turned its back on the world – is that a conformist and authoritarian society doesn't permit different experiments, so the chances of finding that one in 10,000 breakthrough are like finding a needle in a haystack.

So, conformity is really overrated in my opinion, and we need more dissidents. My final question is, firstly, what should societies do at the policy level to be less conformist? And then, as a well-known maverick yourself, what should individuals do to be more maverick?

MC: So, first of all, government should have no place in trying to get people to conform, other than basic human needs. What we believe as a society is best at a base level – education, safety, healthcare, food, shelter – just supplying basic needs. Beyond that, there's nothing that a government should do to try to get people to conform in any way, shape or form. It goes back to what you said about Trump voters. Let them be them and let them try to find their way. If you work with them and understand and listen more than anything else…

Take a step back. Historically, the two parties are both top-down. The Republican party here talks about trickle-down economics, and the Democratic party is trickle-down big government programs. Then you hope all of that trickles down to the people who need it. It rarely does because the money stays at the top on the Republican way, there's some, but most of it stays at the top, and it's hard via government to have money find its way to all the people that need it because they have to be applying and get approved for all this stuff and there's a lot of inefficiency.

I'd rather see what we're doing now happen, which is more Modern Monetary Theory – where we need

stimulus, can we get more than a 1 per cent return from our citizens? Can they be more productive, to your point, letting an unlimited number of experiments happen even at the tiniest level because entrepreneurship and innovation doesn't have to be on a big scale to start. Sometimes some of the littlest companies turn into the best ecosystems and communities. Sometimes some of the littlest things turn into the biggest things. You just don't know, particularly in a digital world, what'll take off. So I really believe in a bottom-up approach where we try to remove as much friction as we can, including not trying to make people conform, and allow people to blossom and try things that they need to try. That's first and foremost.

In terms of individually trying, I tell people all the time: the best time to go for it, no matter what it is, is when you've got nothing. When you're dead-ass broke; what have you got to lose? That is the best time to start a business, and that's why you see so many companies started by so many young people. They see things differently, they find a different perspective. The best ideas don't cost a lot of money to start. Few people are like Elon Musk trying to build spaceships and cars and flamethrowers. Most everybody else starts with an idea and a service or something they can make, and anybody can be an entrepreneur.

That's where you get all these ideas blooming – when you enable people to do things however they see or choose. That's what I've always done. If I keep on learning, then I can keep on coming up with ideas. If I keep on reading and paying attention, or now watching more videos like my kids do to try to keep up with what they're seeing, then I can come up with new ideas. And if we encourage people, again to your point, to be different but learn, because in my mind the more information you consume, the more excited you are about learning, the more different you're going to be. You'll have a completely different perspective on life, and that's how you find things.

Steve Jobs famously said, 'Everything's a remix.' That's the way I've always looked at things, and that's what I've tried to teach my kids. You don't have to have that one 'oh my God this is unique, no one ever thought of it' idea. You just have to take something and make it better enough so that people want to consume it or use it or learn from it, and then anything is possible.

JW: Anything is possible. Mark Cuban, thank you so much for being so generous with your time and insights.

MC: It was fun, yeah. It was crazy. Good questions, made me think. I can't believe you're the first person ever to question me on books I read, and so to me when I read books there are things I take from them and I don't really think about the whole book. I always look at it and say, 'Okay, what is this thing that I've learned from this book and why am I reading it?' And then I might remember the concept and not the details. So, you were testing me. I appreciate that.

JW: Thank you so much Mark.

The Jolly Swagman

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LIVING INSIDE MUNCH'S SCREAM

WHAT ART HAS TO DO NOW IS CREATE SPACE, RECREATE ROOM

KARL OVE KNAUSGÅRD
CONVERSATIONS WITH TYLER
2019

Interview by Tyler Cowen
Illustration by Janelle Barone

Tyler Cowen: I'm here with Karl Ove Knausgård, one of the great writers of our civilisation. He also has a new book coming out, which I enjoyed very much, called *So Much Longing in So Little Space: The Art of Edvard Munch*. Karl, thank you for coming.

Karl Ove Knausgård: Thank you for inviting me.

TC: In Book Six of *My Struggle*, you mention René Girard and that mimesis is a useful concept for understanding human behaviour. How do you think about who or what you're trying to copy?

KK: Who I'm trying to copy?

TC: Yes. If you believe in mimesis.

KK: That was a tough first question, I have to say. How can I have come to that? I think there are several ways you could reply to that question.

The first level would be whatever's related to literature, to the art of fiction – how to tell a story – which is something you learn through reading. And you have to have that for writing. There are several ways to tell a story, several ways to enter a scene, several ways to write realistic prose. For me, almost all reading I've done has, I think, subconsciously sunk into me in my own world and in my own writing.

When I, for instance, read Marcel Proust for the first time, I absolutely loved it, and I read it like I was drinking water or something. But I wasn't aware of soaking it up at all, and I couldn't write at that time. Two years later, I wrote a novel. It is incredible; there were many similarities with Marcel Proust, but I wasn't aware of it. It was just something that happened. That's one level of mimesis.

The other level is the opposite. It's unlearning everything you know to be able to access what I like to think of as the world – the world we live in – because sometimes fiction can be so mechanical and so locked into certain ways to look at the world that it's more like you're looking through literature than through the world.

That was what I was struggling with in *My Struggle*: trying to find a language for my experience of the world. I wasn't interested in writing a novel. I was interested in trying to get the language from my experience of the world.

And I think that is the key to Edvard Munch – what he did as a painter. Very much so because he grew up in Norway at the end of the nineteenth century in a kind of a certain pictorial language, which was realism, which was naturalism, and which was a national romanticism. You know – the glossy images of mountains and flowers and that kind of thing.

TC: Yes.

KK: That was what he had available when he started. He wanted to paint.

TC: And he described his art as an act of confession, as you know. Is that true of yours? Are you fundamentally in the confessional tradition?

KK: Yeah, I think so. I think what Munch had was some experiences, very strong experiences. He lost his mother when he was very young, and then he lost his oldest sister, which was even harder for him. I think what he lacked when he started to paint was a language to express that. He couldn't do that through glossy, nice romanticism. So, he had to break down everything he knew about painting to try to get that through what he had experienced.

That's the same thing with writing. That's what you want to do – get that personal experience. The thing that only you feel. The thing that only you see. The thing that only you know. Get that through. If you do that, you realise, 'No, that's how everyone sees it. That's how everyone feels.' But that's kind of the thing you have to try to reach, to tap into.

When I started to write *My Struggle*, I didn't know that existed. I just wanted to do it for my own sake, more or less. And yeah, it was confessional.

TC: I reread a lot of your work in the last few months, and what struck me more is what a – in a sense – conservative writer you are. At first, I thought of you as a radical. But if you think of this long-standing pietistic, religious tradition of self-scrutiny, you have Rousseau, Goethe, even Swedenborg, August Strindberg. I now see you as very much in that tradition – that you're the next Nordic confessional, and quite religious as a writer, in a way.

Would you accept that characterisation?

KK: Pietistic I will accept, and a part of that Nordic tradition I will very much accept. Religious? That's a bit more difficult to relate to, I think.

TC: But you wrote a whole book about angels, and it's striking: Swedenborg, Strindberg – they were obsessed with angels.

KK: Yes, true.

TC: You're obsessed with angels.

KK: True.

TC: Why the combination of angel obsession and confessional from the Nordics, including you? What's the unity there?

KK: The obvious thing in regard to that is that a pietistic Christianity is a very personal relation to God, a very intimate relation to God – much more than a collective play like a religion as Catholicism would be. Much more internal than external. And, as a novelist, that's the confessional path, so to speak. But these things you don't think about. These things you just do.

If you are born into a culture, that culture becomes part of you. That language becomes part of you. And something of that you have to challenge. Something of that you are not aware of. It's just part of you. There are certain writers I do really love, and I think that is part of my culture. And I think I'm similar to them because of many different things.

But these things you are talking about – more cultural, deep-layered things, the pietism. These are not things you think about. These are things that just happen. But it's very un-modern. That's true.

TC: Yeah.

KK: It's very old-fashioned.

TC: Arnold Weinstein has a book on Nordic culture, and he argues that the sacrifice of the child is a recurring theme. It's in Kierkegaard's *Fear and Trembling*. It's in a number of Ibsen plays, Bergman movies. Has that influenced you? Or are you a rejection of that? Are you like Edvard Munch, but with children, and that's the big difference between you and Munch, the painter?

I told you we ask different questions–

KK: Yes. You just said different. You didn't say difficult.

There was a lot of grouping together. Here you had Kierkegaard and the sacrifice of Isaac and the biblical story, which basically is a story about faith, and what it is to believe in God, and what it demands to believe in God – the completely irrational level it takes to believe in God. The leap out in the unknown, which you have to take.

It's an interesting thing going on in that essay, which is a wonderful essay about Abraham sacrificing Isaac. It's that it also has some small parts about breastfeeding in between, which

is incredibly strange, and I've been thinking a lot about that. What is that?

But it's moving away from something. It's going from a mother into society, and the leap of religion is going from a society into the unknown, into the things we don't really know about, the things we don't have language for.

There is another very interesting Nordic poet called Inger Christensen. She wrote a collection of essays that are really brilliant, and she talks about those kind of border areas. It's a matter of language – what we can express and what we cannot express. In science, those are the string theories. The things we don't know.

And the border is the language. We don't have language for it. We can't really. She also said, like a letter in a book cannot read what's around it, cannot read the book, we are the same in the world. We cannot read the world. We're part of it.

But that was Kierkegaard. I find it hard to connect Kierkegaard in regard to children, sacrifice of children. And Bergman? Bergman is completely different somehow.

TC: But children are abandoned, both in his life and in the movies?

KK: I know. Bergman's workbooks just came out in Sweden. It's not his diaries, and it's not his plays, but it's kind of an in-between state, all the notes he took when he was working with things. It's incredibly interesting because you can see how a film surfaced from almost nothing and just became a film. And you see all his struggles, you see all of that.

But then in one particular passage, he wrote about a film he wanted to make, and then he said, 'Today, my grandchild died.' And that was it. Just a little passage, like he really didn't care. In a normal person, it would have filled that person completely. And then that little episode turns up in his next film, that the child is drowning.

There is another episode from Bergman's life, that when his son was lying on his deathbed, he refused to have his father come there, and that's a very, very strong statement.

TC: Sure.

KK: You have this almost archetypical artist putting his art before his children, before his family, before everything. You have also Doris Lessing who did the same – abandoned her children to move to London to write.

I've been kind of confronted with that as a writer, and I think everyone is because writing is so time-consuming and so demanding. When I had children, I had this idea that writing was a solitary thing. I could go out to small islands in the sea. I could go to lighthouses, live there, try to be completely solitary and alone. When I had children, that was an obstruction for my writing, I thought.

But it wasn't. It was the other way around. I've never written as much as I have after I had the children, after I started to write at home, after I kind of established writing in the middle of life. It was crawling with life everywhere. And what happened was that writing became less important. It became less precious. It became more ordinary. It became less religious or less sacred.

It became something ordinary, and that was incredibly important for me because that was eventually where I wanted to go – into the ordinary and mundane, even, and try to connect to what was going on in life. Life isn't sacred. Life isn't uplifted. It is ordinary and boring and all the things we know.

You have these myths, and they work for some. They don't work for some, but you can relate to them. I have a friend. He's a brilliant writer, and he always says, 'When you want to create something, you have certain . . .' I don't know the English word. You have certain things that are fixated. What do you call them? Premises?

TC: Assumptions? Axioms?

KK: Yeah, you just have to accept them and work inside of them. That's the only way. If you can't write, then you have to start right out from that fact. I think that's the best advice I ever got – to accept everything that happens. So, if you have many children, it's a good thing. If you don't have children, it's a good thing. You have to embrace it because that's your life. That's where you are, and writing should be connected to that, or painting or whatever it is.

TC: Your focus on Nazi history in part of book six of *My Struggle* – is that a kind of confessional for Norway and Knut Hamsun? Or the parts of Norway that were attracted to Nazism? How is that connected to the fact that you wrote a confessional about your own life? Clearly you have no sympathies for a Nazi regime at all, but there's a connection between your culture, history?

KK: Yeah. It's many connections. One would be that when my grandmother died, we found *Mein Kampf* in the chest in the living room. What was that book doing there? Had they read it? And I realised it was kind of a common thing to have that book. It was kind of a common thing to cooperate with the Nazi regime.

When I grew up in Norway, the story we were told at school was the heroic one: the resistance and how every able civilian resisted. But the fact is that in

Norway the wheels were rolling, and the society was working, and there had to be a lot of cooperation with the Nazis.

My other grandfather – he befriended an Austrian officer that was posted near where he lived. When I grew up, there were remnants from the war, like bunkers we were playing in. And it was like war was, in one sense, incredibly distant, but when I start to think about it, incredibly close. It was my grandparents', parents' world, really.

But that wasn't the reason why I started to write. The reason was coincidental, basically, because I called my book *My Struggle*, which is the English translation of *Mein Kampf*, and then I had to read it. And then I realised Hitler's book is his writing about himself. I'm writing about myself. It's the same title.

I started to read him, and I got incredibly intrigued by what I read because there was so much – not that he was lying, but there was so much that was unsaid, so much that he twisted his life into something completely different. Couldn't be true. And I just dived into that and started to read more about it and try to find out what kind of man he was and how all this could happen.

Well, it started out like it started in the book. It's a reflection about names because I couldn't use my father's name in the book. My family forbid me that. So, I started to look around and be interested in what names really are, what they signify. Then I stumbled across a Romanian poet who wrote in German, called Paul Celan. His parents died in the Holocaust, and he was Jewish. He wrote post-war in the language of the Nazis.

TC: Best poet of the twentieth century, perhaps.

KK: Yes.

TC: Maybe Rilke.

KK: No, I think Paul Celan . . . Yeah, maybe.

But anyway, he wrote this incredibly, incredibly intriguing poem where almost nothing can be named. There are no names. And it's like it's almost impossible to say anything. It's like the language is completely broken, so there's no connection between the element and the language. And I read that, and I wrote about it, and I realised this is – and it's about the Holocaust, of course – this is the end of what was started with *My Struggle* (Hitler's).

And then that was the moment in the book – because Hitler also wrote in German – that you could read it. It's bad. You can say whatever you want, but the fact that you could actually read him is intriguing. And you can see everything he wants to do is in the book.

So, I wanted to describe that path from Hitler to Celan. It's the only part in the book that's not about me. But it is, of course, about me. And it's the only part that's not about our time. It's about the past. It's kind of a place, kind of a dark mirror in the book where you could see everything, get a perspective on everything.

And it's the only part I found real pleasure in writing because there was so much I discovered during writing. That, and it wasn't about me, which is a burden to do, but that was different. It's about the generation that grew up with the First World War and made the Second World War happen.

TC: So many great Norwegian writers – Ibsen, Sigrid Undset, Knut Hamsun – there's nationalism in their work. Yet today, liberals tend to think of nationalism as an unspeakable evil of sorts. How do we square this with the evolution of Norwegian writing?

And if one thinks of your own career, arguably it's your extreme popularity in Norway at first that drove your later fame. What's the connection of your own work to Norwegian nationalism? Are you the first non-nationalist great Norwegian writer? Is that plausible? Or is there some deeper connection?

KK: I think so much writing is done out of a feeling of not belonging. If you read Knut Hamsun, he was a Nazi. I mean, he was a full-blooded Nazi. We have to be honest about that.

TC: His best book might be his Nazi book, right? He wrote it when he was what, ninety? *On Overgrown Paths*?

KK: Yeah.

TC: To me, it's much more interesting than the novels, which are a kind of artifice that hasn't aged so well. But you read *On Overgrown Paths*, you feel like you're there. It's about self-deception.

KK: It's true, it's a wonderful book. But I think Hamsun's theme, his subject, is rootlessness. In a very rooted society, in a rural society, in a family-orientated society like Norway has been – a small society – he was a very rootless, very urban writer.

He went to America, and he hated America, but he was America. He had that in him. He was there in the late nineteenth century, and he wrote a book about it, which is a terrible book, but still, he was there, and he had that modernity in him.

He never wrote about his parents. Never wrote about where he came from. All his characters just appear, and then something happens with them, but there's no past. I found that incredibly intriguing just because he became the Nazi. He became the farmer. He became the one who sang the song about the

I've been writing for so long now that it feels like a place I can go to. Go into that place and sit down, and I will be at peace as long as I am there. Even though I write about terrible and heartbreaking things, it still is a place of peace.

growth. What do you call it? Markens Grøde.

TC: Growth of the Soil.

KK: Yeah. Exactly. It's like he's fist fighting himself, doing that. So, he's not your nationalist. He's incredibly complex, and the interesting thing is that you can see that struggle in his writing.

TC: Is your own American travelogue a revision of Knut Hamsun's in some way? Like, 'Well, Norway's going to get it right this time'?

KK: No, but I have thought about doing that – go in his footsteps because he was there for quite a long time. He drove a tram in Chicago, did a lot of things, and it's an exciting story. The thing with writing in his case is that he's getting so close to the world and to the people in his writing. It's so complex that he is not a Nazi in his writing. But in his essays and in his speeches, there's a big dissonance. There, he's a Nazi.

And that's what a teacher can do – get you so close to these things that nationalism just disappears because they don't exist on that particular level. You have to move away from the world – to be able to establish a distance – to be able to talk about these things at all. Norway is a nationalistic country, but it's not in any bad way at all, really. It's a very innocent country.

TC: What's the worst thing about living here in London?

KK: I think, to me, it's being an outsider. It's both the worst and the most interesting. The huge difference between the classes. It's the extreme poverty, and then you just walk up a hill and it's incredibly rich. It's not only a matter of classes, but the area I live in is a rather poor area. It's a black area. And then you go up the hill and it's a white area. I think it's a kind of hopelessness, really, to be here because you can't do anything about it. It's in the structure in the society.

But then also it makes the variation incredible and the richness incredible, and so it's very much an alive city. Coming from Norway, it's very different. It's like all kinds of things going on simultaneously, which is incredibly interesting and nice. I know I'm not a part of it, but to see and to be around. But it has that backside with the privilege going around and around in the same kind of class; you can't move from one to another. The Scandinavian society is much more egalitarian in that sense.

TC: As you well know, Hans Jaeger was a seminal influence on Edvard Munch, and you can think of

him as a highly intellectual, cynical nihilist. Munch knew him in his early years. Has there been a Hans Jaeger figure in your life who's a formative influence? It doesn't come through in your books.

KK: You mean personally or through reading?

TC: Personally. Who's your Hans Jaeger?

KK: I don't have a Hans Jaeger, but I have this writer I really admire, and he's really something.

TC: Who's that?

KK: He's called Thure Erik Lund. He's not translated into English. He's very wild – wild as a person, wild as a writer. He has inspired me a lot and showed me what's possible to do in writing. But he's so particular that it's hard to translate him. If it had been written in English, he would have been, I guess, the level of Thomas Pynchon or whoever. He's that good. But he's so idiosyncratic that it's hard to translate him. He's not my Hans Jaeger, but he's an influence.

TC: Edvard Munch – he was known for beating his paintings, abusing them, not treating them very well.

KK: Yeah.

TC: Have you ever done the same with your books?

KK: Yeah, I'm kind of a careless person. I don't take backups, and I have a window open – it's raining on my computer. I have lost a computer down on the train tracks, but it always turns out well.

But that's not the same. I don't care about how a book looks. I don't deal with that part of it at all. When I'm done with a book, there's hardly any editing. I just leave it and publish it, and I want to move on because it's the process of doing it that interests me, not the result. I really hate it when a book is done because then I know it'll take a few years before I will get into something else. In that, I can recognise Munch. He hardly finished a painting in his life. And he was very reckless with his paintings. There is a certain aesthetic in that as well.

It's like in writing. It's like the difference between Dostoevsky and Tolstoy. Dostoevsky really didn't care. He just didn't have to describe it fully. Just a few sentences, done with that, and he would go on looking for something, like a flame or something burning, the intensity of something he was looking for.

Tolstoy – he wrote about everything and painted it fully and did so wonderfully, but it is completely different aesthetics, and they reach completely different places. When I was young, I thought Dostoevsky was the primary, the one that had reached the front. Now, I'm older, it's Tolstoy, really.

TC: Edvard Munch – he stuck with Dostoevsky as an influence.

KK: Very much so. The day he died, in the afternoon the day he died, he read Dostoevsky, and then he died. So, he just followed him throughout his life. I think Dostoevsky was part of forming his identity as a painter – exactly what's unfinished, exactly what's raw.

TC: Is The Scream a self-portrait of Munch? And is he wearing a mask or a death mask?

KK: Yeah. The Scream is based upon an experience he had walking up the hill outside of Oslo, seeing what you see in that painting, hearing the nature scream. So, in a way, it's a self-biographical painting, but the radicality of that painting is hard to get a grip on now, I think. We are very much used to that kind of distorted way of depicting the world.

I write a lot about it in the book because it was fun, because that's a painting that everyone knows, and everybody has a thought about it. I tried to write about it afresh. What is this? What did it do? I can talk about it if you like, but it's a long, complicated story. I don't know if I can do it.

TC: Let me ask you about Between the Clock and the Bed. Jasper Johns's paintings are often mysterious, but he chose to redo Between the Clock and the Bed. What is Johns on about? What is Munch on about in that painting?

KK: I don't know about the Jasper Johns. Using the pattern on the bed, isn't he?

TC: Right, yes.

KK: Yeah. Munch made some remarkable self-portraits, I think. He did so throughout his life. He started at 18–19, and they were all very different, and I think they were all very good. I think this is one of the very last ones.

The thing with this is, it's so incredibly simple. It's just a man standing there, and it's like he's showing us that. This is it. There's no posing. There's no defense, and Munch was a man full of defense. I think painting was a way for him to get under the defense and reconnect with the world. In this painting, that's what it does. It's like the guard is down. This is what it is.

TC: Is autobiography a kind of defense or protective strategy for you? A way in which life cannot be

a disappointment? There's always something happening you can write about. In that sense, your portfolio, so to speak, is very diversified.

KK: Yeah, it is a place to hide. That it is, I mean, that's obvious. There's that wonderful sentence in Witold Gombrowicz, Polish writer. His diaries are, I think, amongs the masterpieces of the last century. It really is brilliant. He published his own diaries when he was alive. When they were published, he said, 'You know, I just have to retreat one step inside myself.'

That's what you do when you reveal so much about yourself. It's like you could just take a step back, and it's alright. It's not even connected to you if you do that. It's like, 'Okay. I never think about what people know about me.' The act of writing is, for me, a place I can go to and where I am protected somehow.

Publishing books is a different thing, of course. I try to disconnect from that. Don't think about it – the publication of it. What I want to do is to be in the space where I'm writing. It's also a way for me to understand what's going on, to see things that I normally don't see because I'm very much enclosed in myself and in my own space, and I don't really notice things, and I'm kind of closed off to the world. So writing is a way of opening up, also.

There are a lot of things, but I've been writing for so long now that it feels like a place I can go to. Go into that place and sit down, and I will be at peace as long as I am there. Even though I write about terrible and heartbreaking things, it still is a place of peace.
I find reading does the same thing. I've always done that. I think that was why I read so much when I was little and when I grew up. I think I became a writer the moment I realised that that space is the same. The reading space and the writing space are basically the same, and you do the same things in those spaces.

TC: Why does Munch have so many mediocre paintings, some might even say bad paintings?

KK: He didn't really care, I think. He wanted to capture something, and if he didn't do that at the first instant, he moved on. But he kept all the bad paintings, too. I find that also very interesting.

TC: Is that a model to emulate or a cautionary tale for you?

KK: I was curating a Munch exhibition in Oslo at the Munch Museum, so they gave me access to the magazine in the basement. I was shocked because you pull out these enormous kind of walls, and there was, maybe, ten paintings or fifteen paintings on them. And it was a complete mix-up, with masterpieces, terrible paintings, sketches, mediocre things, old things, new things.

It was like being in a work of progress. If you go to museums, you see everything finished. Everything is almost stylish. Everything is art. This was completely different. This was entering into a process because the paintings they have are the paintings Munch had when he died, everything he kept, everything he didn't sell.

When I did that exhibition, I thought that was an opportunity to try to give new access to Munch. In Norway at least, you can't really see Munch because you've seen it. He's so big, and you see all the paintings so many times that you can't really experience them.

TC: You've bought a Munch, right? Head of a Woman? Why buy only one? Why not buy a second? What is your thinking on the matter?

KK: It's expensive.

TC: You enjoy it, right?

KK: Yeah. It was expensive.

TC: They're capital assets. You can resell it someday. Your heirs will have real value.

KK: No, no. It was hard for me to buy that one. Having a Munch in Norway is very bourgeois, and you're very settled when you do that. My excuse was that I got a fee for the curation of the exhibition, and I thought I could use the fee to buy a Munch, so that's what I got.

It's just a drawing. It's nothing, really, but it's incredibly nice. To see anything with a good work of art is that you can see it every day, and you don't get tired. It's like it gives endlessly. It's very simple, extremely simple, but still, something comes from it every day, which is what you want from a piece of art.

TC: You showed up seven minutes early for this interview. Do you think of yourself as ultimately a defender or a critic of bourgeois culture and bourgeois virtue?

KK: When I was a teenager, I was very much in opposition to it.

TC: But that's the typical pattern of someone who's older, right?

KK: Yeah, but you know, I don't really care. That's true. I'm too busy raising children. I'm too busy trying to survive that I can't really afford to think in those terms. I remember when I had my first

daughter, and I was with her full time. I thought, 'This is very unmasculine, and this is taking away my identity.'

But then I had three children and then four children, and who cares? You just deal with them and try to be good and go on. It's the same now. It's about that. If that's bourgeois, if that's what it is, I don't care.

TC: You've written in great detail about raising your children but, looking back, what is it you feel you understand now that you didn't then? If you were to add in a footnote? Because retrospective memory is quite different from experience in the moment.

KK: Yeah. That's hard. I mean, there are so many things I did that I wish I hadn't done. But that's life.

TC: Most of them don't matter, right?

KK: Yes, but that's life. That's how it is, and you can't undo it. You do have to experience things and learn things. I can't tell a young father what to do, what to not do. You have to find out for yourself. The thing about the book, which I'm happy about, is that it covers the process. I wrote it in two years. As you say, I've forgotten everything now in my head, but it's in the book. It's captured in the book – to see how I was thinking, to see, mistakes I made, or whatever. But still, it's like a slice of life that's in those books.

TC: Is it possible at all to enjoy your works on audiobook, or is the use of voices different from yours too discordant for stories that are so personal, that are so you, so confessional?

KK: No, I don't read my books and I don't listen to them. In Germany, they have readings very different from here. It's readings, so you have an interview with the writer for maybe 5 minutes, and then it's 1 hour of reading. When it's a foreign writer, they have actors reading. There have been some incredibly nice experiences if there is a good actor reading.

TC: Is it better than you?

KK: Yes. But then it becomes proper storytelling, and it becomes literature, and that's very strange to witness, but also very nice.

TC: You're obviously very fluent in English. What do you feel the English-language reader loses in the translation from the Norwegian?

KK: I think the translations are excellent. Donald Bartlett – he translated five and a half of the six books, and Martin Atkins did the last part of book six.

You have incredibly good writers everywhere, in every country, and when I'm outside of a novel, I just look at them, and I think it feels so hopeless. How are they doing this? How are they managing to do this? And if you think like that, you can't really write.

He asked me in the beginning how hands-on I wanted to be in the translation, and I said, 'You can do whatever you want to. I don't want to have anything to do with it.' Then I remember getting book five in the mail and, almost accidentally, I started to read, and I just kept on reading because it was so well done. It was in English, so it was kind of removed from me, but still I recognised everything, and I think he's a world-class translator, Donald Bartlett.

But an interesting thing in that regard is that I have another translator for my other books. She's a poet. She's half-Norwegian, half-American, called Ingvild Burkey, and she translates my language completely differently. It's a completely different feeling of her language than his language.

Both are brilliant but in very different ways. He's much more translated it into an English novel, and she's much more translated it into a Norwegian-feeling English. So, she's closer to my language, and he's much more above, and both come from the same writing. Very different, both very good. They have different qualities, so to speak.

TC: Why do we put dead bodies in the basement rather than the attic?

KK: Good question.

TC: You asked it yourself in book one.

KK: Yeah, but that was a long time ago.

TC: Are all Swedes crazy?

KK: Not all.

TC: Which Ingmar Bergman film has influenced you the most and why?

KK: Sitting here with you, I can't really think of any Ingmar Bergman films.

TC: You once said *Wild Strawberries* was your favourite, but favourite may not be the same as influence.

KK: No. I think *Scenes from a Marriage* is incredibly good, to be serious.

TC: That's the best movie ever made if you watch the whole thing through, I think.

KK: Yes. I think that's his richest and best. I love *Persona*, and I do actually – even though I know Lars von Trier hates it, like *Fanny and Alexander* also. It has such a fairy tale touch to it, which I like. But no, it is *Scenes from a Marriage*, I think.

TC: I like *Smiles of a Summer Night* very much, the Mozartian feel, the Shakespeare connection. It's a very alive movie for me. Peter Handke – what kind of influence have his novels had on you?

KK: That's hard. I'm discussing him and his influence in book six, actually, because he is a writer I absolutely admire, and I think my writing doesn't reach up to his knees, his writing's knees. But *My Year in the No-Man's Bay* is a book that I read in – it must have been the nineties when it came out – before becoming a writer myself. Or was it exactly that moment I started to be a writer? That was very influential.

And his writing about the things that don't belong in a story and the things that really don't belong in a landscape – the areas between the city and outside of the city – the railway tracks, the grass, the fences, kind of the world as it is outside of the story, I think. The book about his mother is absolutely fantastic.

TC: Is Elena Ferrante the main contender for having bested your achievement? For handing out lifetime achievement awards for contemporary serious fiction.

KK: I've only read one Ferrante book, and that was D*ays of Abandonment*. I would have cut off my left arm to have written that book. I think it was so absolutely brilliant.

TC: Try *The Neapolitan*.

KK: I know, I know. As I say, I have a problem with things I know are very good. I'm not a jealous type, but I feel I will be by the end. But that book, *Days of Abandonment*, was really, really outstanding.

Luckily, there's no competition here. I do what I can do. You have incredibly good writers everywhere, in every country, and when I'm outside of a novel, I just look at them, and I think it feels so hopeless. How are they doing this? How are they managing to do this? And if you think like that, you can't really write. It has to come, has to be personal, has to come from inside, has to be within something without looking out.

What you're talking about is outside of books. Then you can start and be jealous and, 'Oh, no.' Or, 'Why did he get that grant and I not?' And 'Why did I get such bad reviews?' And stuff. That's worthless. It's completely worthless, and I try to stay away from it as much as I can.

TC: But we know Ibsen was obsessed with medals and honours, right?

KK: Yes, he was.

TC: Was that a character flaw?

KK: It's a very funny flaw, I think.

TC: One you share or not?

KK: I don't share that, no. But he also had a mirror in his hat so he could take out his hat and look at himself, which is also very funny. And he was a very little man, loving medals and having a mirror in his hat. That's funny.

TC: From another literary tradition, take Calvino, Borges, Cortázar. Are they, in your view, in some ways overrated, and is your objection to them ultimately a political one?

KK: No.

TC: They're running away from life in a way. Correct?

KK: No, no. I feel quite comfortable in Borges. I think he's superior. I think he's a master, really a master, and an author I've learned a lot from, not in ways of telling a story, but what the story tells you about the world. He has been very influential in my worldview, basically, especially one called *Tlön, Uqbar*. It's a short story.

TC: Sure.

KK: It's just the best short story ever written, I think.

TC: We agree on that, actually.

KK: Cortázar is also very good, but he's not Borges. And Calvino, I love. *The Baron in the Trees* is one of my favourite books.

If I could write like them, I would, but I can't. Every time I have something fantastic, I mean in that sense, something that really could happen, I try to write it. I can't make it work. Just don't have it in me. It has to be some sort of realism. I have to believe in it myself. And the magic with Borges is that you believe it completely. He makes it completely believable.

And his essays are absolutely wonderful. And in every little essay, every short story almost, you can pull something out of value. So, he's absolutely one of my favourites.

TC: Is Magnus Carlsen going to withdraw from the World Chess Championship cycle?

KK: Chess is not my world.

TC: Has liberalism exhausted itself?

KK: Maybe not liberalism, maybe capitalism.

TC: There's something about the aesthetic people in the early twentieth century – Hamsun included – who seemed to think that a vital sense of the aesthetic, maybe it didn't quite have to be fascist, but it had to move the artist somewhat in a direction which we, today, would mostly consider unpleasant. Do you think a strong notion of the aesthetic and liberalism are totally compatible?

KK: Good question.

TC: T. S. Eliot would be another example of someone who moved in a quite unsavoury direction.

KK: I don't know, really. Fascist literature? Is that even possible?

TC: But liberalism in literature is also tricky. Take Romain Rolland, who is a great classical liberal. He wrote books that everyone read at the time, but they're mostly forgotten. They're seen as a little flat.

KK: I don't know, what do you mean by liberalism in this?

TC: The notion of a particular neutrality across values, which government then enforces by having impartial laws, and people believe strongly in some underlying notion of neutrality. Doesn't that clash with the aesthetic impulse at some level?

KK: Yeah, of course. Yeah, if that's what you meant. Yeah, definitely.

TC: In your own thought, how do you reconcile those two things?

KK: What I'm struggling for in my writing is what I call literary freedom, and it's a space where I can be free in every sense, where I can say whatever, go wherever I want to. And for me, literature is almost the only place you could think of where that is a possibility.

My fear is that that space has come closing down on you. You're closing it down yourself and becoming more afraid for what you're saying. 'Can I say this? Can I do this?' And this power is also strong, you know? It's so hard to go somewhere you know is wrong.

I did it with *My Struggle* because I wrote about my family, and I knew, of course, I shouldn't do this, and really it is immoral to do this. And then I did it because I wanted to say what I wanted to say, and

I wanted to be free to talk about, to write about my own life in a completely free way.

That's also why I admire writers like Peter Handke. He had the Yugoslavia controversy around him, and you have a lot of controversies around him. But what he does is, he's there. He's hardcore, saying what he thinks and standing for it, no matter how ugly it looks from the outside. And that's what you can do in literature and no other place, I think.

This is an internal struggle in every writer, I think. And it goes in almost all levels of society. I find it hardest to go into the private places that belong to my family and my life, but you have all the political topics. You have a lot of things you can think of. But it's good that it's a struggle, and it's good that there's an arena where we can have these fights.

But the notion that literature should be good in a moral sense – that I find ridiculous. That's useless.

TC: As a boy, which were your favourite comic books? You've written that you loved comic books growing up.

KK: Yeah. When I was little, it was Lee Falk's *Phantom*. That was really big in Norway. A bit older, it was *Modesty Blaise*. But I read absolutely everything.

TC: And what are the politics of those comic books that young boys tend to read?

KK: Then, in the seventies, it was very sexist, very racist, and all kinds of things. My mother discovered what I actually was reading, so she forbid me to read comics, which was a very harsh punishment, it felt at that time. But it made me start to read books. So, it was a good thing in the end. She was completely shocked by what I was reading, and it was common. But that was the seventies. I think it has changed, maybe. I don't know.

TC: You've spent some time in a creative writing program – is that correct?

KK: Yes.

TC: Did you learn much there, or was it just a waste of your time?

KK: I learned a lot. But what can I say? It was like running into a wall. I was running full speed into a wall, and I fell down, and I lay down. For six, seven years I couldn't write after that. I was young when I started. I had all this illusion about myself and about literature and what I could do, and I couldn't do anything. I felt like they were ridiculing me, and they were, actually. Then it took many years before I could write.

And what I learned was I met the world literature.

TC: Yes.

KK: And I also met Norway's best writer. He is called Jon Fosse, and he was 29 at the time, and he was a teacher there. His notion of quality is absolute, and he was very, very important to me just because he showed me where the level should be: 'This is literature; this is what literature can do.' I haven't reached that level, but I'm above where I was when I was 20, at least. And it was very good to know that. But it was completely terrible for me at the time and many years afterwards because I had no self-confidence. They took away all my self-confidence. I couldn't write.

TC: The creative writing program took away your self-confidence?

KK: Yeah, yeah.

TC: And that was a good thing?

KK: In the end, it was a very good thing.

TC: How did you get your self-confidence back?

KK: I haven't got it back.

TC: Haven't got it back?

KK: No, but I have helpers to help me. They want to pick me up from nothing, and my assistant editor … I really couldn't write when he saw something I'd written and believed in me. He still believes in me, and he has to tell me every week that what I'm doing is interesting, what I'm doing is good, and that he believes in me. And he has done so for 20 years. Without him, I wouldn't have been a writer.

I also have friends who do the same thing. They said, 'Okay, this is good. Don't give up. Keep on writing.' And they do because, if not, I wouldn't have the strength to do it. Maybe I would, but it makes my writing life much easier to have helpers.

TC: Your first book in English but, I think, your second book overall: *A Time for Everything*. Why did you write a whole book about angels?

KK: I really don't know. I've always been interested in the physicality of man, matter, the brain itself, the physicality of the brain, the way we are animals, the way we eat, and the way we take the world in, and the primitiveness of us. And then, you know, the heaven above, all the things we dream of.

When I read the Bible, something that occurred

> *The Scream* is one of the most iconic paintings there is [...] it's a painting about anxiety, and anxiety is incredibly painful. So, it is a painting about pain.

to me was the physicality of the angels. That's such a wonderful image. And I thought, 'Okay, they are eating in the Bible, they are walking with God in the Bible.'

I thought, 'What if I read the Bible from that perspective? What happened to the angels? Where are they?' Because they saw angels before. We don't see them. Then I thought, 'Okay, maybe they have been tempted to be in the physical world too much, and then kind of been almost centrifuged into the world and been part of the world and can't escape, and they're still here around us.

That was the thought. And in a way, it's a metaphor for what happened with religion, why many of us don't believe anymore. Why there's no heaven above us except commercials and TV programs and stuff. What happened? What happened with religion? What happened with God? What happened with heavens? You know? How come we are all down here now, and what's that about?

That was not why I wrote it, but that was the outcome of the writing.

TC: And why the fascination with the Cain and Abel story? It's family struggle, and it's rivalry.

KK: Yeah, that's true. And it's only like eight lines or something in the Bible. It's almost nothing. It's so rich, and it's bottomless. They have been discussing that and reading that for thousands of years, and you can still say something new about it. That simple story: a brother killing another brother.

I'm just reading about gnosticism now. They take a liking – some of them – for Cain. They like to turn everything upside down. So, God is really the devil, and this really is hell, and Cain is really the good one, the one to look at. You know, it's just an endlessly fascinating thing. It means so much – so many layers of meaning in that simple, simple story.

That's the best part of the Bible: those very short stories. Incredibly rich and layered with meaning.

TC: To close, why don't we return to your new book? Again, it's called *So Much Longing in So Little Space*. Give us your take on Munch, *The Scream*. You've referred to this earlier.

KOK: My take on *The Scream*? You know, that's what happens when you're writing. You just start. I just sat down with a Munch book and thought, 'Okay, I'll write a book about Munch. Let's see where this goes.' Then you just enter it, and then comes something back, and then, two months later, you have a book.

The Scream is one of the most iconic paintings there is. Everyone, I think, has seen it. It's so recognisable. And almost we have an intimate knowledge of it. We see it, you know? But the painting is about the

opposite. It's about something very strange. It's hard to do this in English, but it's about the world being almost unrecognisable. It's seeing how strange the world is. And we do this in that painting that we instantly recognise.

And it's a painting about anxiety, and anxiety is incredibly painful. So, it is a painting about pain. But we see a million dollars, we see its fame. We don't see that.

But the interesting thing for me when I wrote about it was what kind of paintings Munch had access to and how they painted at that time. Because no matter how painful things were, they were always taking place in a space, in a room. And having that space, having that room, you know the events in that room will one day be over. Something new will take place there.

Madame Bovary is very painful (the ending), but you know that world will continue. And there is a kind of comfort in that. There isn't an acuteness in it. You could see it. You know it will pass. And you observe it from the outside, so you see it at a distance. You see something painful – a sick girl – at a distance, and it's in another room, and it will pass.

But Munch does set in that painting to remove that room, to remove that space. Because all the landscape is subdued to the person in the painting. So, it's his landscapes. There's no room in it; there's no neutrality. When that person is gone, the landscape is gone.

So, there is no space, and there is no time. It's instantly painting, it's acute. It's like it's happening now, and we share the space with the painting. And in that is the radicality of the painting – that there's no space and there's no comfort. It's an acute thing. It's instant, and you have to relate to it. You can't see that painting without relating to it. I mean when you see it for the first time.

And the interesting thing now, I think, is that that's a fair description of the world – of how it is now. It is an instant world. We get access to painful things that happen as they happen. Today, there was a massacre in New Zealand. The minute it happens, we know about it, we relate to it, we feel the pain, and we see the pictures. That didn't just happen. That didn't happen at Munch's time. It was unheard of.

Now that's the world. We live in the world of *Scream*. There's no space between us and the world. Everything comes bombarding us, you know?

So, what art has to do now is the opposite. It has to create space. It has to recreate rooms. And I was thinking about that and also writing in the book about – I was at an exhibition of Anselm Kiefer here in London. It was the White Cube. It was absolutely magnificent, but there were no people in it; it was only spaces, only room. And it was kind of mythological rooms. It was like it was giving space to events that weren't even there.

I think both Kiefer and Munch are great artists, but they lived in different times and they had different missions. For Munch, it was very important to give access directly to pain and to a distorted vision of the world, and to give a truer account of how it is to be.

And now it's the opposite because now we need space and we need comfort and we need time and we need something. I'm not sure if art is what should do that, but that's what I felt when I started to write about Munch.

And another interesting thing is that exactly the same thing is going on in the literature at that time, you know? You have the epic novel with all the characters, all the rooms. Tolstoy is a very good example because that is a book about rooms.

And then you have, for instance, Knut Hamsun in *Hunger*, which is just one person and his distorted version of the world that exists. And when he dies, the world disappears.

TC: Karl, thank you very much for coming by.

KK: Thank you.

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REWILDING

BRINGING NATURE BACK TO A BRITISH FARM

ISABELLA TREE
ECONTALK
2020

Interview by Russ Roberts
Illustration by Vaughan Mossop

Russ Roberts: Today is the 21st of January, 2020, and my guest is author, journalist and conservationist Isabella Tree. Her latest book, which is the subject of this week's episode is *Wilding, The Return of Nature To A British Farm*. Isabella, welcome to EconTalk.
This is a rather extraordinary story. Beautifully told, a very personal story about how you and your husband let your 3,500-acre farm, the The Knepp Castle Estate, which is about 50 miles south of London, go wild. You let it return to nature, and your book is the story of the expected and unexpected things that happened. You began as farmers. What went wrong? Why did you decide to give up farming?

Isabella Tree: It took us 17 years to realise what was wrong with our land. It's basically very, very heavy clay. I think the Inuit is supposed to have dozens of different words for different types of snow, aren't they? In the old Sussex dialect, we have thirty-five different words for mud. That's how much it governs our lives, living on this stuff. It's like unfathomable porridge in the winter, when you've had a wet winter like we just had now. You literally can't get heavy machinery onto the land sometimes for six months of the year. So, you can't do any heavy maintenance, any ditch clearance, no maintenance of hedge rows, and you can't sow spring crops. You simply cannot compete with farms on much better soils than us, particularly in a globalised market. We have tried everything. We did what every good farmer is supposed to do.

We intensified, we bought bigger machinery, we experimented with new types of crops. We got different dairy animals in with higher yields of milk, we even diversified into ice cream and yoghurt. Then Haagen-Dazs, the Darth Vader of ice-cream manufacturers, came over and blew us out of the water in Europe. Whatever we tried to do, it was really the soil that we were battling against the whole time. We never turned a profit, and we realised after 17 years that we were going to have to try and do something else on this land. We wanted to try something that would work with the land, rather than battling against it all the time.

RR: What was the initial strategy and what got you started? Why did it ever cross your mind that it would be potentially a good idea to just leave the land alone?

IT: It was very interesting writing the book, because it made me identify the moments when the penny dropped, and obviously you're on a journey, so there are different intervals when the penny drops and you get further and further embroiled in this direction. We have a wonderful 500-year-old Oak, known as the Knepp Oak, just yards from the house, which was beginning to crack down the middle. During the war, when the Canadian army was stationed at Knepp, they tied it together with tank chains, and these were actually beginning to fail. I think the first penny dropped when we wanted to do the best for this tree, to see if we could save it for another couple of centuries. A wonderful man called Ted Green was recommended to us. He's the custodian of the Royal Oaks at Windsor, in Windsor great park. Wonderful man, now in his eighties. He came to advise us on this tree, and he said there was nothing essentially wrong with it. It would go on for another 300–400 years. We just gave it a bit of a haircut and helped stabilise it a little bit with a few extra wires.

What he was really horrified about, when he turned his back and looked at all the oak trees in the park, was that they were dying back and looking very stressed. What had been a landscaped park around the house until the Second World War was plowed up for the war effort, and had been under intensive production ever since. These Oak trees might've been planted by the landscape architect Repton in the early nineteenth century – some could have been even older, 300 or more years. I suppose Charlie and I had noticed it, but we had thought it must be down to some natural disturbance, maybe a drought, maybe the hurricane in '97. What Ted pointed to was the soil, and he said, 'You're plowing every year up to the tree trunk. You are turning up its roots, its whole mycorrhizal fungi, that wonderful network of root systems underneath the soil that bring nutrients and minerals into these trees. You are pouring chemicals and fertilisers, artificial pesticides, herbicides onto the land every single year, and this is what is assaulting the trees. You're basically killing their life-support systems.'

We'd never thought of it like that. We had considered ourselves to be nature lovers, stewards of the land. We didn't think we were doing anything wrong, and we suddenly realised that actually we were culpable. That what we were doing to our land had a knock-on effect on life. It was the first time I think we had actually pointed the finger at ourselves. It was a very interesting moment, and that's when we decided that we could restore the park. We found countryside stewardship funding to restore the Repton Park.

RR: What did that mean 'to restore'?

IT: By then we had stopped farming in the area. We stopped farming in the area around the house, in the old Repton Park. We basically impoverished the soil again. We grew hay crop for a couple of years, and carted it off the land. You're basically taking all those artificial nutrients, that surplus fertility that you're pouring on with your nitrates, out of the soil. Then we reseeded with native grasses and wildflowers. That summer, after reseeding, we were amazed. We walked out of the house into knee-high ox-eye daisies and wildflowers. We were kicking up common blue butterflies, and the sound of grasshoppers and crickets was deafening. We suddenly realised that we hadn't even heard insects when we were farming. It was a sound we weren't even used to.

Then, of course, with the resurgence of insects, came all the birds, and suddenly we were surrounded by bird song, and it felt like we were living in the middle of the Serengeti. Then, in order to keep the grasses down and to keep the system going, we introduced free-roaming fallow deer. Just seeing wild animals moving around the landscape, not harried, not harassed, not seeing the land under the plow, growing maize one year, then barley, then wheat, and sheep. It felt like the land itself was giving us a tremendous sigh of relief. That was the most relaxing moment of all: of lifting this burden off ourselves, of feeling that actually that we were doing something with the land.

RR: What did you expect to happen at that point? If you could cast your mind back to that? Obviously, we're going to talk about some of the things that happened that you didn't expect, which is a much longer list I would guess, but what did you expect was going to happen when you planted those native grass seeds, and introduced those deer? Was there a plan in some sense?

IT: We knew we were trying to restore a Repton landscape – Humphry Repton was quite a managed landscape architect. We weren't trying to do anything typically different to him. But suddenly feeling that life was resurging in this way made us bolder. It made us think we could actually roll out a project for nature across the whole estate. And perhaps outside the landscaped areas of Repton Park, we could do something a bit wilder, a bit more experimental. That's when we met this amazing Dutch ecologist, Frans Vera. He had just published a book called *Grazing Ecology and Forest History* in 2000, which was the year that we sold our farm machinery, and our dairy herds, and we actually gave up farming.

I think because we were then out of that terrifying tunnel vision of trying to make a farming system

work, we were much freer in our heads to think of options. What Frans Vera was saying sounded exciting to us: that in all our imaginings of what our landscapes used to look like, we tend to forget the zoology. We forget the big animals, the megafauna that would have been here driving the creation of habitat before us. We forget about things like the aurochs, the ancestor of the domesticated cow. We forget about the tarpan, the original horse; about bison, the European bison; about elk, which you call moose. We forget about reindeer and red deer, wild boar, beavers by the million.

All these animals would have been shaping our landscape in Europe, and we've forgotten about them because we hunted most of them to extinction. Or at least we excluded them from our agricultural landscapes, from our river systems, and they only exist in very small numbers in remote areas. But if you put them back into your landscape, what you get are suddenly really big, dynamic processes, natural processes, that are disturbing the soil, adding urine and dung, even their carcasses, to the soil. A huge nutrient cycle that starts to kick off. You're then adding processes that connect with vegetation, so disturbance with scrub, with plants, even as far as ring-barking and getting rid of trees. You have a huge impact on the environment that is very dynamic, and that is rocket fuel for biodiversity.

What Frans is saying is, if you want to recover biodiversity – we've seen catastrophic collapses, I think in Britain we've lost 60 per cent of our biodiversity since 1970 – you must allow these animals, or proxies of them if you haven't got the originals, to freely roam around the landscape and kickstart that dynamism again. That's what we thought we'd try and do, to try and experiment. See if we could get really dynamic nature back in our landscape by releasing some free-roaming animals on our land.

RR: I want you to talk about a tension that you discuss in the book between what you described as 'closed-canopy woodland,' which we would call a forest, and open-grazing grassland. I think there's a natural tendency to think that forests are natural, and that letting things return to nature, we'd get a forest – there'd be some trees, there'd be some birds in it, and maybe some squirrels or squirrel-like small creatures.

But there's a very, very big difference between that and the open-grazing grassland, which is, as you say, more like the Serengeti, more like what in America we would call a prairie. It's a very different landscape. You started with a manicured landscape, a farmed landscape, and you started letting it go, introducing animals, and then it changed. Talk about first that tension between those two types of ecosystems, I would call forest and prairie, and then how you experienced that, what you did to introduce those species into the land, and how it changed?

IT: This is something that I find so interesting, this word 'forest'. We have this idea very much in Europe that before human impact, every area in temperate-zone Europe that could grow trees would have been covered in trees. In Britain, we have a legend that a squirrel could have run from John O'Groats in Scotland, all the way to Land's End in Cornwall without touching the ground. This idea of a primal, verdant, unfathomable forest has become almost a metaphor for an untouched, pristine state of nature. An Eden myth. I think it's really important to understand how it works, because we have to have an idea of what we want to recover in terms of nature conservation. If we look at what we had here in the past, it wasn't closed-canopy forest. It would have been much more open. It would have been like a wood pasture. Interestingly, the word forest originally doesn't mean closed-canopy woodland at all. It comes from the Latin *foray*, which means 'outside'. It was really the area outside the cultivated land where you had all these free-roaming wild animals. In Germany, they called it the *walde*, the wild. That's the word that our Sussex *weald* comes from. We're on low-weald clay. It would have been a much more open landscape of forest.

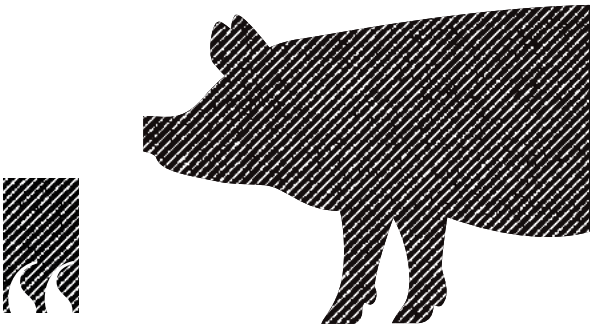
A forest actually meant land where you have deer, and in Scotland now, you have deer forest where there isn't a single tree on it. It's very important to recognise that we've changed the word forest. We consider it often. We even call a plantation a forest, and it's very species-poor, very undynamic, very static. We have very few bird species in Europe that actually live exclusively in closed-canopy woodland. Where you find most of the biodiversity, and the floral complexity, is where you have glades or clearings, where you have areas that are managed for coppice – the margins around the woods. You don't find that much life deep inside closed-canopy woodland.

RR: Explain what coppice is.

IT: Coppice is when you cut a tree, so that it grows again. It's an amazing ability that trees have to regrow their shoots. Centuries ago, we would coppice for charcoal. You have these tall, thinner shoots that come out from the base stump, and you can keep coppicing in a rotation every few years.

RR: In American English, we call it pruning, I think.

IT: There's also pollarding, which is when you do the system higher up. What we're doing, in essence,



What we're doing is just mimicking nature all the time. It's very important to have that notion in our heads of these free-roaming animals, disturbing the landscape and keeping it open, and moving the habitats on.

is imitating the browsing animals. The reason that trees bounce back when they have their limbs cut off, is because they would have been browsed and broken and trashed by animals like bison, red deer and, in the distant past, by things like straight-tusked elephant. What we're doing is just mimicking nature all the time. It's very important to have that notion in our heads of these free-roaming animals, disturbing the landscape and keeping it open, and moving the habitats on. Essentially, you would have had trees in the landscape, many of which are light-demanding species, which can't regenerate naturally in those canopy conditions. You would have had thorny scrub, you would have had water meadows, bogs, heaths, all shifting and kaleidoscopic and moving.

RR: Talk about scrub. I think scrub is what we would call it – it would include things like bushes and weeds especially?

IT: My new year's resolution is never to use the word weed ever again! At least not to refer to that. Our native wildflowers, maybe.

RR: We had Rory Sutherland on, and he said a weed is a flower without a marketing budget. I think that's sympathetic to your view. This landscape would have all this diversity rather than just trees – talk about what you introduced into the land in terms of fauna?

IT: For the first few years, we allowed this vegetation to scrub up, so that you're getting your thorny scrub back into the landscape. Things like brambles, hawthorn, blackthorn, dog rose, gorse even.

RR: Thistle?

IT: Thistle, absolutely. All this scrub coming back into the landscape – once that was really established, we began to introduce our free-roaming animals. Because we don't have the aurochs anymore – we hunted it to extinction several centuries ago – we can use its descendants, which are domesticated cattle. We have old English Longhorn, which is a very hardy breed that we've chosen instead. The theory really is to choose old breeds, because we intended not to interfere, or to interfere as little as possible.

So, no supplementary feeding, and they wouldn't be given any shelter. There are actually a few barns out there, but they never use them. Essentially, to let them to their own devices. We introduced Exmoor ponies to stand in for the tarpan, the original horse. The Exmoors are a very hardy breed of horse. They've got wonderful adaptions to living in very cold climates. A wonderful, very wild, sturdy little horse. Because we're not allowed to introduce

wild boar, we're using Tamworth pigs, which are a wonderful proxy for the boar. They're big ginger pigs, very closely related to European swine. They've got quite long legs, long snouts, so they're very good at rootling. They can run as fast as a horse for short distances. Amazing animals. Then we introduced fallow deer and red deer as well. Again, the idea is that all these animals have different mouthpieces, different ways of browsing and grazing, different vegetation preferences, and completely different ways of disturbing the land.

RR: Give us a rough idea of how many of each you started with?

IT: Very small to begin with. We allowed the herds to build up very gradually. It was probably about twenty English Longhorn to begin with. We now, over the three different sections of the rewilding project, probably have about 400-head. Again, with the ponies, we introduced about six in the beginning, and we have now a herd of about thirty. Very, very small numbers to begin with.

RR: The pigs?

IT: Pigs, we started off with ten, two sows and eight piglets, but we thought we would be able to have a herd of about seventy or eighty and make this wonderful jamon, but I'm afraid pigs create much more of a disturbance than we'd anticipated. We still have relatively few pigs in the system. We probably have about six females, and they will have a litter of maybe six piglets every year. The numbers fluctuate, but the vegetation complexity and biodiversity depends on having this very diverse number of megafauna out there, the different species that are doing different things.

RR: Just to clarify, the reason you couldn't introduce wild boar is that your land is semi-public – there are paths running through it, people can ride horses through it, they can walk through it, they walk their dogs through it. There are roads that go through it as well, so there were some limits on what you could introduce and, in particular, there are no predators?

IT: That's right. The question about the wild boar is a really mad, anomalous, weird British thing – it's categorised as a dangerous wild animal, even though it was present in our landscape until about 400 years ago. There are now feral populations that have escaped from wild boar farms, back in the countryside colonising. You've got this weird situation where you can't introduce a wild boar, but if it gets onto your land of its own accord, then it's no more notifiable than a fox or a badger. We're in this weird system where we're just hoping that the scent of our delightful Tamworth sows will entice some wild boar from about 10 miles away, and they'll break down the fence and get in, and we'll be able to have wild boar. We would certainly love to have bison, for example.

We have a job on our hands to convince the government and the great British public, that that would be fine. In Europe where they are much more adventurous and perhaps less insular than we are, bison are proving to be a real keystone species in all these huge rewilding projects. There's one rewilding project in the Netherlands, about 800 acres or so in size, just a few miles from Amsterdam, where bison are quite happy to tolerate footpath walkers. There's even another reserve where they've been able to acclimatise bison to dog walkers. It's perfectly possible to live with these wild animals. We've just got to get used to how to do it. It is as much about training people as it is about training the animals themselves.

RR: We talked with Pete Geddes, of the American Prairie Reserve, about their extraordinary efforts in the Western United States. That's a very desolate area – desolate is too strong – but it's relatively unpopulated. You're in a somewhat populated area, and of course you have neighbours who saw what was happening to your land. You describe in the book (it's both comic and tragic) their reaction to this. To seeing your land go from being a very manicured farm land, at least manicured on the surface – as you point out, what was going on below the surface was not nearly as attractive – to something that was more like a teenager's bedroom or my office right now: chaotic, unplanned, unmanicured, unmanaged. You did introduce these animals, but you let them run wild and let the vegetation do whatever it was going to do. They didn't like it so much. Talk about the reaction you got from the great British public?

IT: It's understandable, because we are, as you say, used to very manicured landscapes. The picture postcard of the British countryside is linear edges, it's tightly managed hedges. It's isolated woodland. There's no scrub in it at all. Rivers are canalised. It's very micromanaged. If you're used to looking over your hedge at this sort of landscape, and suddenly you see a riot of thistles and ragwort and thorny scrub popping up, you're going to be outraged. We had letters to Charlie, my husband, that his grandparents (who we inherited the estate from) would be rolling in their graves. That we turned something beautiful into an abomination.

We were accused of being lazy, irresponsible, unpatriotic even, because we weren't producing food from our land anymore. That 'dig for victory' ethos from the Second World War still persists, I think, in Britain.

We did have to steal ourselves to continue a lot of the time in the early days. Then, eventually, headline species started coming back. Suddenly, some of the rarest species in Britain started popping up on our land, birds like the nightingale and the turtle dove, which is supposed to be going extinct from Britain in the next 10–15 years – its numbers have declined from 125,000 pairs when I was growing up in the sixties, to less than 3,000 now.

Suddenly, we were finding turtle doves breeding on Knepp in this amazing thorny scrub that was coming back. Perceptions began to change. People began to realise that there was method in our madness, and when they were walking in the footpaths – and we probably have about 20 miles of footpaths on our land – people began to hear the bird song. Slowly, that aesthetic began to change – it is an aesthetic that we've grown up with. It's conditioning that makes us think that the land is good to look at when it's micromanaged. A lot of it is about letting go in ourselves, and our own perceptions of what is beautiful. We even had a letter, which was so lovely, last year from one of the women who had written to us, the one who had said that we turned this beautiful landscape into an abomination. She apologised. This was 15 years on. She said, 'I wrote this letter in anger, and I now realised I was too quick to do that. And now I realise that your land is still beautiful, but just beautiful in a very, very different way.' A lot of what we have to learn to do if we're going to start managing our land in a different way, and doing it in a way that is wilder, and to encourage biodiversity – and we haven't even talked about all the other things that can come from this system as well, like carbon sequestration, soil restoration, flood mitigation, air purification, water purification, all these other things that come together when you restore land – it all boils down to changing our own mindset about what we feel happy living with and looking at.

RR: Talk about some of the species that have come there, and the numbers of them – particularly the butterflies, the owls, the bats, the dung beetle. I feel like it's teeming with life, your land. I don't know if you may have romanticised it a bit, but it's certainly more teeming than it was when you were farming.

IT: What's happened here has astonished not just us, but all the specialists – the scientists who've been monitoring and helping us survey what's been happening over the years. It is just astonishing. If you walk out into the scrub on a spring morning, the sound of birds is so strong you can actually feel it vibrating in your stomach. We have now all five UK species of owl. We have thirteen out of the seventeen breeding species of UK bat, including two bats that are so rare, they're rare even in Europe.

Of course they're flooding in, because they're seeing not just the habitat – we leave dead wood, which is obviously wonderful for bats – but also the insect populations are just rocketing. We've now got one of the rarest species of butterfly in Britain, the purple emperor. We're by far the biggest colony of purple emperor butterflies in Britain. As you say, dung beetles, I mean the lowly dung beetle, which I probably hadn't given a second thought to before.

RR: Maybe not even a first thought…

IT: Not even a first thought! When we were farming, of course, we were putting wormers into our cows, and antibiotics, all the time. Their dung was full of the kinds of chemicals that will kill a dung beetle stone dead. But now, of course, we're in a completely organic system, and we're beginning to understand how crucial dung beetles are, as a keystone species. They're pulling the dung back into the soil to replenish it. It's one of the quickest ways of kick-starting natural processes under the soil – this thing that the beetles do, pulling down the dung into the soil. My husband's turned into a bit of a dung beetle fetishist. Last year he was following the cattle around with his mobile phone, and every time one of them did a cow pat, he would drop to his stomach next to the cow pat. I couldn't work out what he was doing, but he was timing how long it took the dung beetles to find the cow pat. I think the record was under 60 seconds. That was fine until he started bringing the cow pats into the kitchen and continuing his experiments on the kitchen table – there were unspeakable things in the freezer for a while – but at the end of the summer, he'd identified twenty-three different species of dung beetle in a single cow pat, and including one dung beetle, the violet oil beetle, which is so rare, it hasn't been seen in Sussex for 50 years. These creatures are clinging on somewhere in the landscape, to little shreds of habitat. As soon as the opportunity is available to them, they colonise and find us, and then the populations explode. It's a miracle really.

RR: Three-and-a-half thousand acres sounds like a large area, but it's only about five square miles, if Google is correct in telling me. It's not the size of, say, Yellowstone National Park. It's a very modest area that you have created unintentionally – I say that explicitly – you did not have the intention of having twenty-three dung beetles on your soil. I want to read an excerpt because it'll resonate with many themes in this program.

'It was becoming clear to Charlie and me that had we set out with the intention of creating the perfect habitat for purple emperors, a butterfly, we would never have achieved the numbers that have

spontaneously emerged through rewilding. The phenomenon is an example of what we are learning to refer to as emergent properties. An emergent property is a property that a complex system has, but which the individual constituents of that system do not have, like the cells of the heart, which on their own do not have the property of pumping blood, which together create a higher-level aggregate, a complex organ that does. At Knepp, previously missing or dormant components were coming together, striking up extraordinary and unexpected outcomes. In fact, two plus two was making five, or more, and this imposed on us as midwives of the system, acceptance and humility about our role. There may well be other factors involved in the success of purple emperors at Knepp that we have not yet identified, perhaps may never identify a preference for certain types of animal dung, minerals, temperatures, moisture, or some other tiny cog in the wheel, or a fortuitous combination of any number of things. What seems imperative is that we take care not to fall into the trap of assuming as conservationists have, so often in the past, but a couple of specifics, some tall trees and a massive amount of silos, is basically all the purple emperor needs. This is tantamount to asserting that the individual cell of a heart is the property of pumping blood, an assumption known as the fallacy of division. The purple emperor butterfly with its complicated life cycle involving numerous stages, requiring different conditions over the course of almost a year, beats its wings to the tune of the entire symphony orchestra that has conjured it into being.'

The nature writing in this book is just spectacular. It makes you want to step outside. But that idea that we do not fully understand the complex connection between the different parts of the land, is something that really rings clearly throughout the book, and it resonates with many themes on this program, about emerging order. We often talk about it in the economic sphere. But, certainly, in the natural sphere it's really an incredibly beautiful thing.

IT: I think it is a very difficult thing for human beings to sit on their hands and do nothing, and to allow nature to express itself. We've learned to micromanage so much that we find the thought of unpredictability very nerve-wracking. I think that's something we need to identify and change in ourselves somehow – to actually feel joy in the unexpected, rather than fear. To trust that nature has had millions of years of R&D. That it knows how to regulate. That it has amazing abilities to rebound, and to sort out systems, and to control monocultures. I think that trust in nature is something that we lost in this role that we've imposed on ourselves, as playing God in the countryside.

RR: In another book called *Feral*, which is about the rewilding going on throughout the UK and in Europe, by George Monbiot, he has a very negative view of sheep. What I liked about his book, among other things, is that he understands that sheep farmers are going to disagree with him, and that they have a life and a set of expectations that may not be the same as his, and he's tolerant of their differences with himself. He basically says that we've come to believe that a sheep-dominated landscape like Scotland's and other places that are fundamentally denuded of vegetation, it is somehow natural, and we're neglecting the fact that it is not natural.

One of the puzzles I had reading your book is that sheep are not natural, but deer, in some settings, also act like sheep – they basically destroy everything green, if you have enough of them. You're in a setting where one might have thought that you've simply replaced sheep with deer and oxen or Longhorns, and ponies, they're all grazing away. Why is your landscape so vibrant, and why has it not been reduced to the more sterile species-free world of, say, a sheep pasture?

IT: I love George's description for sheep-wrecked landscape. I think sheep are a slightly different question, because they are not originally from Northern Europe. They're from Mesopotamia. They've been in Britain for several thousand years, but our vegetation hasn't evolved with them in the same way. I don't go as far as George. I would say that there's probably a very good role for sheep in rewilded landscapes. It's all a question, as with any herbivore, of the numbers. At Knepp, we're very careful about the stocking density.

There are two basic natural processes in action out there in the wild. One is vegetation succession, so that's the growth of plants, the movement into scrub, and then eventually closed-canopy woodland. Then the other is your large herbivores, your animals out there that are grazing and browsing, interrupting that process. There are two forces at battle with each other. What you want really is neither force to get away too much. You don't want too many animals, because then you'll get an overgrazed system, something that we're very familiar with. We were driving up through California and seeing your wonderful oak wood pasture, but super overgrazed underneath by cattle. Those are very much the systems we have here. We're used to seeing huge numbers of sheep overgrazing, and red deer in Scotland grazing everything out of the landscape.

You don't want too many animals, and you don't want too few, because then you have your scrub turning into closed-canopy woodland, which is again, very static and species-poor. You want that interaction to be able to go on together. It's that

which creates all the messy margins that stimulate biodiversity. In the past, you would have had huge migrations of animals moving through the landscape, from one place to another, allowing areas to recover as they were left behind. At Knepp, we don't have that. We've got a relatively small enclosed area. We keep the stocking levels of animals very, very low.

We're culling animals all the time. That produces 75 tonnes of meat off the project. We're also very aware that we don't have predators, as you say, we're not Yellowstone. A wolf needs – I can't remember how many hundreds of square miles of territory wolves needs, but it's huge – and the same with the lynx, which would be our other large predator. That's not viable, particularly in the Southeast of England, and for busy conurbation.

Predators are not actually responsible for population control, as such. If you look at somewhere like the Serengeti, where you've got huge numbers of predators, they only account for about 10 per cent of the mortality rate in those herds of herbivores. But what they do, is they push them on, so the herbivores bunch up and they move, they live in a landscape of fear. That has the impact of allowing vegetation to be released from the pressure of herbivores. Again, that's a system that we don't have here, so it's another reason for keeping the animal numbers very low. We want to make sure that they can come through even the harshest winter. We don't get many frozen winters anymore down in the south of England, with snow, like we used to in my youth. But we want the animals to be able to come through a long winter, especially if it has been very wet with not much grass, in really good shape. That's another reason for keeping the numbers low.

RR: We talk here occasionally about the challenges of creating a prairie. They're not that different than the challenges of creating a vibrant economy. We know what it looks like when it's done. A prairie has a certain set of species, in America at least. A grassland will have a certain set of species, a certain dominance of some, a lack of dominance of others. Similarly, with the economy, we know a successful economy has got property rights, it has freely moving prices, it has competition. Starting with those doesn't work as well as I think most economists would have thought and, similarly, just trying to mimic a prairie is not so effective.

If you want to make a cake and you know what the ingredients are, but you don't know the right order and the amounts, you don't get a cake, you get a mess. A mess that's not edible. A prairie can be a mess, but it has a vibrance and a dynamism as you point out. Now in America, my understanding is in many ecosystems, fire plays a crucial role, but I assume there's not a lot of fire at Knepp. I wonder if

We talk here occasionally about the challenges of creating a prairie. They're not that different than the challenges of creating a vibrant economy. We know what it looks like when it's done.

someone who took a Knepp-like area in a different part of England and tried to do what you did, it wouldn't have come out the way yours did. They could've gotten a different succession of plants and animals, flora and fauna. What are your thoughts on that?

IT: I think the question of fire is a very, very interesting one, and of course it's so much on our minds now. We're thinking about the terrible fires in California, and now this furnace in Australia. If we look back into the role of megafauna, it can be very instructive. In temperate-zone Europe, I think fire wouldn't have played such a huge role, because we have very few trees with ignitable sap. Even in the driest of summers, if you try and light a bonfire outside, it generally doesn't work, unless you put some petrol or something in it too. But I think that the role of herbivores, particularly in brittle landscapes, is to take out that dry vegetation, that thatchy stuff that can very quickly ignite.

I was talking to a friend, a regenerative farmer in Australia just this week, and he said in areas of Australia where Aboriginal friends of his had their land, they haven't caught fire because they culturally burn. What has been erupting with such drama recently, are areas where there aren't the herbivores anymore to take out the thatch, and also there's no system of controlled burning. But I think also landscapes can undergo a catastrophic shift into a landscape where burning is part of the natural process. I think that happened for example, in Australia, and I wouldn't be surprised at all if it hadn't happened in America too with the extinction of megafauna – the dozens and dozens of huge species in America, including a whole suite of camels. That's where the camel came from, and horses, all those species that were wiped out after human arrival. In Australia they lost all their megafauna that were larger than a grazing kangaroo. Some of them were giant and this had a massive impact on the environment. Suddenly you knock out all those big grazers and browsers, and you have all this ignitable vegetation in a landscape that can very quickly combust. Australia now only has grazers rather than browsers – that's a huge shift to a situation where you're now prone to fire – and then you get fires happening, which then take out more temperate trees, and you get trees that can withstand or even need fire, and shift to a different fire-tolerant vegetation, which starts desiccating it even further. The question is, would introducing some of these megafauna back into a landscape again actually start regenerating soils? Could that start getting rid of some of this dry, thatchy vegetation? Could it kickstart a moister microclimate in areas again? I think it's an interesting dynamic that we're only just beginning to consider.

RR: I'm curious how you think about the virtues of leaving things alone – leaving things to nature, taking your hands off the steering wheel, giving up control. Things I personally find very challenging but, systemically, deeply rewarding. Yet you have to cull, because you don't have those predators, you have to intervene, you have to manage the herds of those animals on your land. One, talk about the psychology of having to give up your principles to some extent, because you have a fixed area of land, and you're trying to make it wild, an hour south of London. Then two, talk about what you've done to try to make lemonade out of those lemons – the selling of meat – which, incidentally, the American Prairie Reserve has a similar 'flavour', pardon the word, where they reward farmers who allow animals to pass through their land. They give a badge of approval to the beef that's grown on those properties, where effectively those cattle-raisers have allowed a land bridge for these larger and wilder creatures. So, farms that cooperate with this prairie project in the western part of the US get honoured with this badge of approval, which then makes customers happy when they're eating it because they know they're contributing in some sense to a wilder environment, not just eating a grazed animal that was raised for food. But, in your case, you're actually selling the meat directly.

IT: I think the way to look at it is, rewilding, there isn't a formula for it. We're all on a journey in a sense. The ultimate goal might be to be somewhere like Yellowstone, but actually even Yellowstone probably isn't enough.

RR: It's not so wild.

IT: We want continental connectivity. If you're looking at a tiny area like Knepp, or even miniature nature reserves – we've got nature reserves in the UK that are one acre big, protecting a particular species of orchid – I think you have to look at that on a spectrum. When you get to Yellowstone, you don't need any human intervention. When you're at an acre looking after one particular orchid, you need masses of management to micromanage, to protect that orchid. But when you're at Knepp somewhere, wafting about in the middle, you can be as hands-off as you can possibly dare. Our main intervention, as you say, is controlling the number of animals.

That, specifically, is because we don't want to see them starve. You could actually let them starve. You'd lose your scrub and your vegetation for a bit, the population would collapse, and then eventually the scrub would come back, and the population would rise again. That's what would happen in the Serengeti, or even in enclosed areas

like on Ngorongoro Crater. We make a virtue out of that sensibility, that we don't want to let animals starve. So, we cull them. That's now a very important income stream for us. It brings in about £200,000 a year. That's very low input, so of course the profit is very high, and we hope to be able to encourage more profit from that as we begin to sell direct to our consumers.

There is, increasingly, an interest in buying ethical meat, avoiding industrially grain-fed feedlot meat, really thinking about where our meat comes from. It's an income stream for us, and I think it's something that other rewilding projects can also imitate. We also now have an ecotourism business, which again has brought in income. We are now looking at being a sustainable business, whereas before when we were intensively farming, we definitely weren't. It's a model I think that can be rolled out. I think ecotourism is definitely on the rise. The more urban we become, the more there is a hunger, a need, to get out into wild spaces. We know how much it affects us, not just physically, but also mentally if we disconnect ourselves from nature. I think all these things are really interesting. I think that the American Prairie Reserve project is an astonishing model, and it's huge.

Ultimately, it's all about connectivity. We would like to be able to connect with other landowners around us, perhaps even as far as the sea, 20 miles away. As soon as you have that connectivity, you can let your animals roam even further. You can take your hands further off the steering wheel. You could perhaps actually let some of the populations go for a bit. The larger you can become, the more connected you can become, then the further up that graph towards Yellowstone you can go.

RR: I just want to put a footnote on that: I'm afraid you're idealising Yellowstone a bit. It's a beautiful, magnificent place, but as you know, until maybe 25 years ago, they had exterminated all the wolves from the park – but they didn't cull – so the elk population got rather large, which eventually killed off the beavers. Then because there was very little vegetation on the sides of the streams, the willows were destroyed. It's a rather extraordinary thing – it's a beautiful example again of unintended consequences. When they reintroduced wolves, the beavers came back, because they were able to reduce the pressure of the elk herds on the stream areas and other vegetation.

The other part of Yellowstone that is very relevant is that Yellowstone, for a long time, did not tolerate – probably still doesn't – fire very well. The managers of Yellowstone would put out a lot of fires, partly for fear it would spread to inhabited areas nearby. But because there was close to a zero tolerance of fire, thatch that we were talking about earlier built up, and then there came a fire they couldn't put out. The horrible, enormous fires of Yellowstone come from mismanagement, and not allowing the smaller fires to work.

IT: I remember seeing that. Absolutely. I think that the apex predator trophic cascade that you talk about with the wolf is an astonishing one, and it just shows that even in areas that vast, you need the full suite of predators and herbivores for the whole thing to function. Again, the problem with the fires was that it was too hands on. It was not allowing fires to happen that ultimately caused the big problem of a massive take-all fire.

RR: I make the analogy to the financial sector as well, that if we have zero tolerance for bank failure, there will come a set of failures that require a bailout that's both socially and economically disastrous with all the decisions that get made along the way. People say to me, 'Oh, so you wouldn't have bailed out the banks?' I don't know if I'd have bailed out the banks or not. I don't envy the decisions that people made in 2008 when faced with that crisis. But the seeds for that financial conflagration, were sewn in the decades before, with all the small fires that they refused to let burn. As a result, riskier and riskier decisions were made. I think there's a useful analogy there.

I don't want to leave this untouched. It's not the easiest topic for some of the squeamish in my audience, but don't you have to cull your ponies? They're called ponies, but they're not. How much does an Exmoor pony weigh, and how much, by the way, does a Longhorn weigh, roughly?

IT: You're asking me something I really couldn't tell you.

RR: But they're big.

IT: They're very big. We don't cull our ponies yet. We would like to in the future, because it's very difficult to have a viable natural herd if there is no market for them. What do you do when your population is so large that you feel it's beginning to impact on the rewilding project? Our capacity is probably about thirty ponies. At the moment, we can take the ponies to other rewilding projects that are beginning to start up – and there is a movement now, which is wonderful to see happening in the UK, from people who've visited Knepp and seen how successful it can be. But there will come a time when those populations will grow, and what do we do then?

At one point when we had no market for our ponies, we had to castrate them. That's deeply

distressing, not only for the ponies, but also for the men doing the castrating. It costs £200 to tranquilise the ponies. Or you could sell the live animal for the market, and you would probably get about £40 for it. Again, you would have to tranquilise it, and get it off to market, about a five- or six-hour journey from here, where it would probably be sold for meat, for France.

RR: Because in France they eat horse, but not in England?

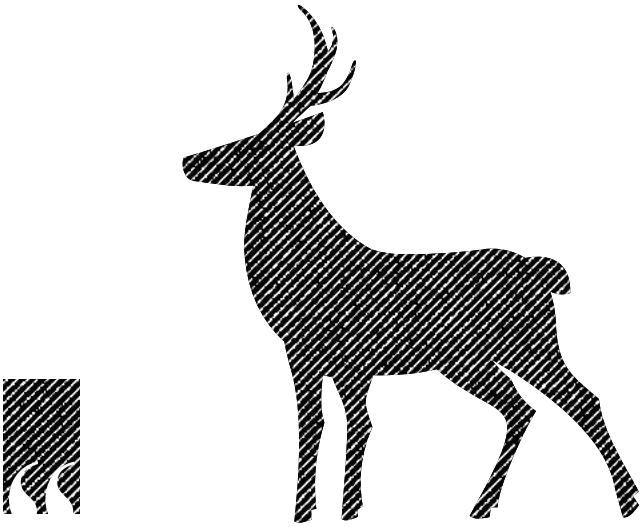
IT: Quite a few countries. England, no, we've had a taboo about it for many, many years. I'm sure we would have eaten horse in the past. Before the Second World War, we would have had millions of horses out there on farm landscape. What would you do when you had a horse that was beyond its life, and you didn't want to go on supporting it for another five or six years beyond its working life? I'm sure people would have eaten their horses. But it's become a big taboo.

But when you've got a wild herd of Exmoor – and Exmoor ponies are still rarer than the giant Panda – you need to keep that dynamism going in the herd. It's very, very sad when you see them just plodding around, the castrated males. They're just eating, there's no dynamism in the herd structure anymore. You don't see the colts play-fighting, you don't see lovely foals being born. Of course, they're probably prone to laminitis because they are doing nothing else but eat.

RR: That's a horse disease, right?

IT: Yeah. It really is having to be pragmatic about how you get natural functioning herds in a landscape again. If we want to see these animals in our landscape, and we don't want to see them starve, and we want to look after their welfare, then you need to be able to cull them at certain periods. If you cull them, then I think you also need to eat the meat. Horse meat is just as good as beef, and we should just be honest about it, rather than trying to hide it away. In the New Forest they have New Forest ponies, another breed of pony. Again, they're secreted away when the population gets too large, and again, they get transported off to France, often live, which is pretty harmful to the animals. I would feel much happier about being honest and selling conservation-grade pony meat, than pretending that there isn't a problem with castrating.

RR: Talk for a minute about the financial side of this. You got a grant from a government source – the main thing you initially needed that money for was that you had to tear up a bunch of fences, and then you had to put up a bunch of fences in different places. You had to essentially ring your land. I'm curious if with the benefit of hindsight, now aware of the revenue you're getting from meat, as well as tourism, whether you think you could have made a go without that government money? Is the amount of money coming in potentially enough to change that calculus? Then the other thing I want you to mention is that the European Union, for a long time, has been subsidising farming. I don't know what the opposite of wilding is, but they have paid people to ruin their land to some extent.



... in areas that vast, you need the full suite of predators and herbivores for the whole thing to function.

IT: I think to kickstart the whole rewilding project we certainly needed that seed money. We still do get agri-environment money from the EU for what we do. It's called a Higher Level Stewardship grant. We get money for having re-established natural systems on our land. We hope post-Brexit, and it looks like the government is going this way, that we will still continue to get money for what we do – we're providing what are called 'ecosystem services' for the public good. I mentioned them earlier, but carbon sequestration being a huge one, soil restoration. We're mitigating against floods, so that properties downstream from us don't flood anymore, because our soil and our vegetation is holding on to water in the floods. We're cleaning the air, we're cleaning water.

Water that pulls on to Knepp from surrounding land is very heavy with nitrates, or it's flooding onto us from polluted roads and towns. But once it's been through the filtration system of our soil and vegetation, the water actually standing on Knepp is of the highest possible quality. We're doing all these services for the public good, that I think the government for the first time are going to recognise that. They're actually going to be encouraging farmers to manage their land responsibly and sustainably. This is something that the EU has not been doing. It's been subsidising people up until now to grow mainly arable crops on their land, irrespective of whether that land is suitable for it, and irrespective of the damage that's caused to the land in growing those crops.

Farmers have been protected, largely, from the penalties given to other businesses if they pollute. Farmers have been getting away with murder, basically, from the amount of chemicals that can be used on the land, destroying the soils, and destroying the water sources. I think it's going to be very interesting, both the incentives that are going to be coming online in Britain, for incentivising farmers to manage their land much more responsibly. But also, I think for the first time, the polluter pays principle is going to be levelled at farmers, and that is going to be a complete game-changer.

I hope that will influence Europe eventually too, which still spends 43 per cent of its entire budget on farming subsidies. I think it's a very interesting opportunity for farmers moving into sustainable, regenerative farming, but also for marginal land like ours, to be turned over to rewilding, because it's providing all these public goods.

RR: Of course, if there were 1,000 Knepps scattered around England, your glamping and safari wouldn't be as interesting. You'd have more competition. Right now, you're in a great situation, where you have this wonderful wildlife park near London, but far enough away, certainly emotionally and spiritually, that people can experience something they wouldn't otherwise be able to experience.

IT: I genuinely think that this is the tip of the iceberg. I think there is a real hunger and passion out there now for connecting with nature.

RR: I agree.

IT: You see one of the first introductions of beavers to this country for 500 years is on a river appropriately called the Otter in Devon. Farmers in the headwaters of that river, which have quite a small farm – a couple of hundred acres – are now making a healthy income stream from working as a bed and breakfast. They've converted a couple of barns, so that people can go and stay, because they're wanting to see just a pair of beavers.

As soon as you have an osprey introduced, you have hundreds of thousands of people paying to go and sit in a bird height to look at ospreys, or white-tailed sea eagles. And it's not just one species. I think it's that ability to go on a break for a couple of nights and be surrounded by life. It's what your wonderful biologist, E.O. Wilson calls biophilia. It's that innate desire in all of us to connect with living things, and to feel ourselves surrounded by humming, thrumming, buzzing life.

RR: I had the privilege of going to Yellowstone twenty or so years ago. I was hiking and came upon an elk herd and it was really majestic. I wasn't aware of it at that time, or thinking about the fact, that it was actually a somewhat destructive force. That the river I was also enjoying seeing wouldn't have been visible if the elk herd had been smaller, because there would have been hundreds and hundreds of small trees sprouting on its banks. It would have had a totally different look.

Before I forget, I want to mention the play *Arcadia* by Tom Stoppard, which deals with some of these issues about manicuring and landscaping versus letting things go their own way. But back to Yellowstone. I'm in this park, and I don't realise there aren't any wolves there. One of the reasons I think the wolves disappeared is that people are afraid of them. They have a mythological, primal fear of that predator. Elk are really safe. I have argued that Yellowstone at that time before they re-introduced wolves, was Disneyfied. It looked like wild nature, but to some extent it had been pruned and culled in its own way through the elimination of the wolf. Certainly, the bear in that ecosystem is kept relentlessly far from humans. Partly because humans don't know how to interact with bears – they leave out their food and that's not good for them,

it's not good for us. But it's a challenging problem. I think we messed it up there, we're trying to get back to a better mix.

I want to close to allow you to talk about what England could look like if you had your way. There'd be beaver, there'd be wild boar, maybe there'd be some lynx. Maybe there'd be a lion or two, or fifty? Some of these things can't exist because of highways. But we could create what you talk about: green bridges, and they've done this in America for animals to migrate safely. What would be your ideal, and what would it take for the public to tolerate nature red in tooth and claw, which I think is part of the challenge that Yellowstone failed at, and is getting better at, and I think England faces a similar challenge?

IT: Interestingly, I think in Europe they are beginning to show how humans can live with predators again. Europe, which is half the size of North America, and much more densely populated, and has a history of management. Our national parks have people living in them, unlike most of yours. We now in Europe have double the amount of wolves that you have in America. We have ten times as many brown bears. Our brown bears are the original. You got your grizzlies from us. Your grizzly is a subspecies of our European brown bear. We've also got lynx now living in twenty-nine European countries. In Germany alone, there are now sixty packs of wolves, and that's grown from one pack in the year 2000.

People are beginning to show how they can live alongside predators again. I think in the UK, we're a long way off that. We're so control-freaky and nervous about anything. But what I'd like to see is our landscape eventually become much wilder. I think areas that are under agriculture will still see intensive food production, but there'll be regenerative agriculture, so they'll be much more in tune with nature. And threading throughout the whole landscape you'll have rewilded areas. Hotspots like Knepp, which are producing these amazing species, connected together with wildlife corridors that will be running through your agricultural lands.

You can have stepping stones, you can have rejuvenated water systems because, thankfully, the beaver will now be back in Britain to stay. We've just had a license to release two pairs of beavers at Knepp, which we're very, very excited by. We will suddenly have much more connectivity, much more diversity, and much more prey species back in our landscape, much more resilience for populations of wildlife, to be able to respond to climate change and pollution. Then perhaps in 50 years or so, my grandchildren, great-grandchildren, will be able to make that decision about is it time – is there enough habitat connected? Is there a big enough landscape? Are there enough prey species? – for us to now consider introducing the wolf and the lynx again?

RR: You're understandably proud of what you've accomplished. I'm proud of it, and I didn't have anything to do with it. It fills me with a lot of pleasure and joy. Has it changed you in any way, besides the fact that you're not out worrying about the farm equipment? Moving from that world of farming to this ecosystem approach you've taken, has it changed your soul, your day-to-day life in ways that are tangible to you or palpable?

IT: I think it really has. Going from being control-freak farmers to the wild side. It's really been a very liberating experience. We've learned how to trust nature more. Just seeing the rebounding life that has come around us is incredibly encouraging, and has given us grounds for hope. Psychologically we've changed as people to being probably much more relaxed. We go with the flow a lot more.

It is a bit of a double-edged sword, because we can walk out of the door here and experience wonderful connection with nature. But we go back to places where I used to love to walk when I was younger, and I now realise what isn't there. I notice the lack of bird song, the lack of insects and the static nature of the landscape. I think it's both been encouraging and heartening. But it's also a real salutary message about what we're missing out. I think it's turned us into pragmatic optimists. Or optimistic pragmatists.

RR: My guest today has been Isabella Tree. Her book is *Wilding*. Isabella, thanks for being part of EconTalk.

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THE EVOLUTION OF A RENEGADE

FOR THE GOOD OF THE GROUP

DAVID SLOAN WILSON
THE JOLLY SWAGMAN PODCAST
2020

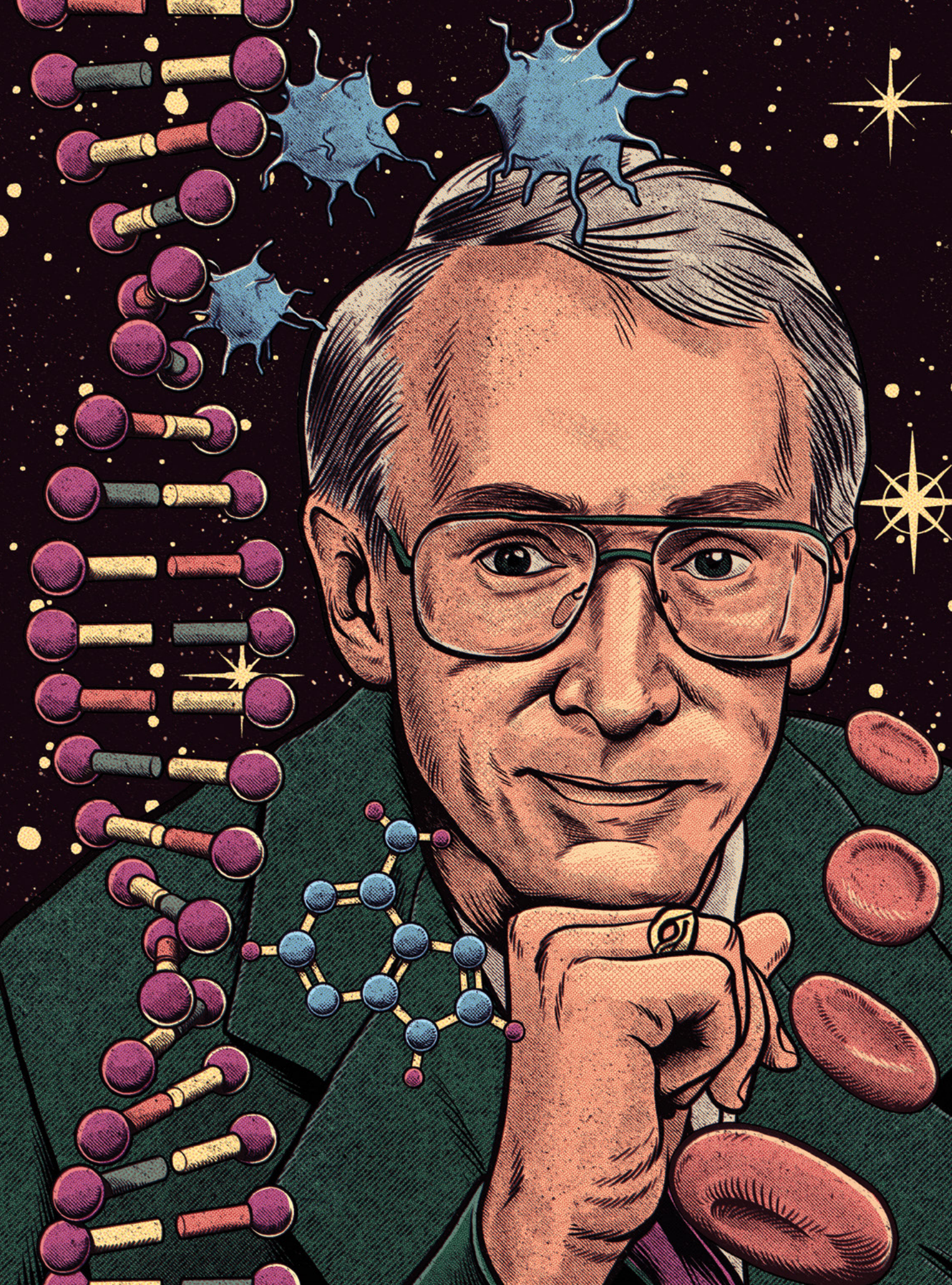
Interview by Joe Walker
Illustration by Pedro Correa

Why is gossip the typical topic of conversation, from campsites to the halls of parliaments? Why is 'antisocial' a pejorative term? Why do returned soldiers often report that their love for their brothers in arms was more intense than for their own wives? Why are English soccer fans almost as passionate? Why do religions exist? Why are we so groupish? I recently ran a Twitter poll where I asked people the question, 'Which scientist has most directly influenced your understanding of evolution?' There were 131 respondents. Forty-six per cent said Charles Darwin, 31 per cent said Richard Dawkins and 2 per cent said David Sloan Wilson, my guest for this episode.

That shouldn't really surprise you. Darwin obviously founded the theory of evolution by natural selection, and Dawkins is influential due to his popular writings. In fact, my impression is that most well-read people get their understanding of evolution mostly from Dawkins' best-selling book, *The Selfish Gene*, which first hit shelves in 1976, and has since sold over one million copies. *The Selfish Gene* eloquently crystallised the notion that genes, or combinations of genes, because of their immortality were the unit of natural selection. Genes were replicated, and we organisms were their vehicles. Despite the book's ambiguous title, Dawkins did not mean to say that selfish genes make thoroughly selfish people, as he explained in his lighter book, *River Out of Eden*, 'There are occasions when genes may maximise their selfish welfare by programming unselfish cooperation, or even self-sacrifice, by the organism … but group welfare is always a fortuitous consequence, not a primary drive. This is the meaning of the selfish gene.'

I think the prevalence of selfish gene theory owes, at least in part, to the celebrity and literary flare of some of its major proponents, Richard Dawkins, Steven Pinker, Matt Ridley. But you may be surprised to know that it no longer represents the consensus view among evolutionary biologists. There is a new idea as to how we got here. Actually, it's not so much a new idea as a revival. The new consensus comes from an unlikely place – an idea that was considered dead and buried only a few decades ago: group selection.

Group selection says that groups, or tribes, can be and were units of natural selection too. Now nobody doubts that some groups survive better than others, but the relevant question here is can differential group survival drive evolution in the same way as differential individual survival does? This wasn't always such a controversial question. In fact, in his book, *The Descent of Man*, in chapter five, Charles Darwin himself made a first nascent pass at the idea of group selection: 'A tribe, including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage and sympathy, were always ready to aid one another and to sacrifice themselves for the common good, would be victorious over most other tribes, and this would



be natural selection.'

But after Darwin's exposition, things started to go off the rails. Biologists began to see 'for the good of the species' behaviours everywhere in the natural world. Fuzzy thinking predominated, and rigour fell apart. This all culminated publicly in a 1962 book called *Animal Dispersion in Relation to Social Behavior* by Vero Wynne-Edwards. In the book, Wynne-Edwards argued that populations of animals, for example, rookeries, can be self-calibrating to protect their habitats or food sources from over-exploitation. In Wynne-Edwards's words, 'The interests of the individual are actually submerged or subordinated to the interests of the community as a whole.' This fuzzy 'for the good of the species' thinking was finally slapped down by George C. Williams, the great evolutionary biologist, in 1966 in his famous book *Adaptation and Natural Selection*.

There are two common objections to group selection. The first is that groups can't be replicators in the same way that genes are; it's incoherent to think of them as such. The second is known as the 'free rider problem', which says that selfless groups would be relentlessly undermined by selfish members, and those members would eventually have more offspring and perpetuate their selfish genes. The free rider problem therefore implies that group selection is inherently self-defeating. By the 1960s, group selection had been, it seemed, irredeemably discredited. And so, when the final triumphant nail in the coffin came in the form of *The Selfish Gene* in 1976, Dawkins could announce that, 'The group selection theory now commands little support within the ranks of those professional biologists who understand evolution.' By the 1980s, one evolutionary bigwig said to a graduate student that, 'There are three ideas that you do not even invoke in biology: Lamarckism, the phlogiston theory, and group selection.'

Then along came our guest, David Sloan Wilson. 'Actually,' David argued in 1994, 'Group selection is not a dichotomous alternative to gene or individual-level selection, but sits on top of it in a framework known as multilevel selection. During our evolutionary history, natural selection happened on multiple levels, in different ratios, depending on the circumstances, so there's a tug of war between different levels of selection. For example, during a famine bottleneck, or during a bloodthirsty tribal conflict, more cooperative groups probably faired better, and so natural selection was stronger at the group level. The group was a vehicle,' to use Dawkins' language, 'for prosocial genes.'

Multilevel selection is well summarised by the maxim of Edward Wilson, exposed in his book *The Meaning of Human Existence*, that, 'Selfish members win within groups, but groups of altruists beat groups of selfish members.' Today the tide of opinion has turned on the question of group selection. To be sure, the old guard seems determined to go down with their ship. Steven Pinker calls group selection a scientific dust bunny. Matt Ridley in his book *The Origins of Virtue*, said it was an edifice without foundation. And Dawkins, reviewing Edward Wilson's book *The Social Conquest of Earth*, which relies on group selection, said, 'This is not a book to be tossed lightly aside, it should be thrown with great force.' But a 2014 survey by William Yaworsky and two co-authors found that 175 evolutionary anthropologists were receptive to group selection, and while a majority said their mentors lean towards kin selection, 55 per cent regarded multilevel selection as superior to the theory of kin selection as an explanation of human sociality.

If this uprising happened without your knowledge, it can all be traced back to one man, my guest, David Sloan Wilson, probably the most important evolutionary biologist you have never heard of. Dave is the guy who almost single-handedly revived a dead theory. Dave is the guy who burst into George C. Williams' office as a graduate student and said, 'I'm going to change your mind on group selection.' That was George C. Williams, the guy Dawkins said he was heavily influenced by, and who wrote *Adaptation and Natural Selection*. He offered Dave a post-doc on the spot. Dave is also the guy who convinced Edward Wilson, the towering Harvard professor and world's foremost expert on ants, to sponsor a paper titled 'A Theory of Group Selection,' and eventually converted Ed to the cause.

Dave is the guy who moral psychologist John Haidt called, 'One of the most important evolutionary biologists of all time.' Haidt also had this to say about Dave: 'It's rare for an academic to be able to look at a major field like biology and point to its history and say, you see that major turning point there? I did that. And that's what David did, that's what David can say.' So how did he achieve this major coup in this major field of biology? Well, this episode tells Dave's story.

Of course, groupishness and prosociality don't require group selection as an explanation, but we humans are oddly groupish. Sometimes we do things for the good of the group, even when they're not seen or witnessed. We are probably what biologists call a eusocial species, which includes bees, termites and naked mole rats. We are, to use a John Haidt metaphor, 90 per cent chimp and 10 per cent bee. Once you understand multilevel selection, a lot of our odd groupish behaviours are suddenly rendered in a new light. It changes how you view human nature, and it changes how you think we should structure our societies.

Joe Walker: David Sloan Wilson, thank you so much for joining me. I'm excited to speak with you because of your monumental achievements in the field of evolutionary biology. For a while you were a lone voice clamouring in the wilderness, in the seventies, when it was almost token to announce your group loyalty at the beginning of an evolutionary biology paper and say that no, 'I'm not invoking group selection here.' But, fast-forwarding 40 or so years, it's now commonplace to acknowledge your ideas and multilevel selection, or at least the principle of equivalence, which we'll speak about later. We're going to start with your background before moving into your career, and then we'll weave in some of your ideas on how humans evolved, how we should think about religion, and what all this means for how we structure our societies and our economies moving into the twenty-first century.

The first question I want to ask relates to your childhood. Your father was a famous novelist, Sloan Wilson, who wrote two very popular books: *The Man in the Gray Flannel Suit*, which was published in 1956, and *A Summer Place*, which was published in 1958. I read *The Man in the Gray Flannel Suit* in preparation for this interview – not the whole book, just parts of it – and it was just so engrossing. It describes a suburban family, probably borrows from parts of his own life, but it just sucks you in, the trials and tribulations and vicissitudes of this family, the vase thrown against the wall that leaves the question mark-shaped crack that friends are inquiring about at a dinner party. It reminded me how much I miss fiction, since I've been reading non-fiction exclusively for the last four years. Which of his books do you like the most, or do you even like his books?

David Sloan Wilson: I do like his books. I mean, he put his finger on the pulse twice. With *The Man in the Gray Flannel Suit*, that was after the Second World War, all those soldiers came back and joined this weird corporate army – basically that's what the gray flannel suit is. Then, with *A Summer Place*, he put his pulse on changing sexual mores in the 1960s. That story is about two adults who had a romance when they were teenagers, went their separate ways and married separate people. Both became unhappy in marriage, and then met again when they both had teenage children, and they resumed their affair. Back then, if you had an extra-marital affair it could just destroy your reputation. He wrote other books, and among my favourites was one called *Ice Brothers*, which relates to his experience in the Second World War as a captain of a Coast Guard supply ship in the Greenland Patrol. My dad was a great novelist.

JW: He achieved fame in 1956 with *The Man in the Gray Flannel Suit*, which would have put you at about seven years old. How did his fame affect you as a child?

DSW: The story I tell is that he was, both by his personality and by his stature as a bestseller novelist, the centre of attention wherever he went. He trumped everything. He trumped pedigree, he trumped wealth. Wherever he went he was the centre of attention, and I could not help but notice that. I think that all offspring – maybe sons more than daughters, I don't know – see this as something they have to match, it's like a benchmark. In my case, that was like climbing Mount Everest, or being asked to. So that was intimidating.

I think kids solve that problem in a number of ways. In my case, the story I tell about myself is that I decided to do something that he could respect, but could not understand – to become a scientist. And do you know, I succeeded admirably. He respected what I did, was very proud of me, and actually never really understood very well what I did. I certainly inherited, maybe culturally, not genetically, or maybe both, a love of writing. So, I took writing very seriously.

As soon as I saw that evolution could say something about the human condition, then that, in some ways, brought out the novelist in me. What novelists do, of course, is try to understand the human condition. My father did it through the lens of his personal experience. Now I saw that I could do it through the lens of a theory, evolutionary theory, but I could reflect upon the length and breadth of humanity. And so that was very attractive to me.

I came of age as a graduate student, just when E. O. Wilson published *Sociobiology*, which was celebrated as a triumph for the study of animal behaviour. But the final chapter on humans created a storm of controversy. Basically, in 1975, it was not acceptable – it was taboo – to study humans from an evolutionary perspective. To say that somehow we can take the same theory that applies to all other species and apply it to our own species was not allowed back then, at least among many people in the humanities. So that was actually the same year I got my PhD. But, for me, it was alluring, not threatening. So, in some ways I was at the vanguard of the post-*Sociobiology* generation.

JW: I've asked you about your father, what was your mother like?

DSW: My mum was a housewife, and a very nurturing person. Both my mum and dad were not religious. My mum would call herself agnostic, my dad was a skeptic. He loved to poke fun at religion and its hypocrisy, but they were nevertheless highly moral.

If you read my father's books, you'll see that all the characters are trying to do well by each other. They might be failing at that, but they're trying to do well by each other. I think that also explains why, when I became a graduate student and started to encounter this idea that everything that evolves must be selfish – the idea that something is genuinely nice, genuinely altruistic, why can't that be a product of evolution? So, I think that *The Selfish Gene* concept was something that offended my sensibilities. I thought it was important to be nice, and surely it should be possible to explain niceness at face value without calling it selfish.

Another story I tell about myself is that because my father was very famous, I wanted to be famous too, and what better way to make your reputation than to show that the theory of group selection, which everyone had rejected, in fact could be revived. So, I ran towards group selection rather than away from it, in part because I wanted to make my name.

JW: So, you were raised agnostic and you would now describe yourself as atheist?

DSW: I was raised agnostic/atheist. My dad would call himself an atheist. Now I certainly do describe myself as an atheist. I'm a true-blue methodological naturalist, you might say. I feel that everything about religion can be explained as a human construction, so yes, I am an atheist.

JW: I was raised Catholic, but I'm now an atheist, so we had probably radically different experiences in that regard. That leads me to another question I want to ask about your childhood – the final childhood background question – and that is, you were sent to boarding school for high school that must've been a very formative experience. I went to boarding school as well for my last two years of high school, and for me it fostered a love of being in and living in communities. We'd cheer as a whole school at sport on the weekend, sing in the choir. And when you do communal activities like that, you really feel a part of something larger than yourself. Did you have a similar experience at boarding school? Did it inform your appreciation of human communities?

DSW: Absolutely. To elaborate on that, my folks were not happy in their marriage, and they got divorced when I was 11. Just before that is when I got sent to boarding school. My mum said – I don't remember it myself – that I was following my father around saying, 'I'm sorry, I'm sorry.' So evidently I was taking the problems of their marriage onto my little shoulders. She thought it wasn't very healthy, and so she sent me to this boarding school, which by luck, or by her wisdom, was the most amazing boarding school you have ever seen. It was located in the Adirondack Mountains, which is a wilderness area of New York State, and it had the principles of basically a small village-like community. It offered this community that you're talking about to an extraordinary degree, and it was just saturated with the outdoors.

There was a working farm, so horses and cows and pigs and chickens that the students took care of. Students did all the maintenance, so we were sweeping floors and doing kitchen duty in addition to our studies. Adults were called by their first name. It was the living embodiment of a small nurturing egalitarian community, and it was absolutely transformative. When you say that you had a great experience, I'm happy about that. I think boarding schools are a mixed bag that way, and that many boarding schools are actually very problematic, because they don't offer that community. You might say they're hierarchical – think of British boarding schools, which can be very nasty places. As it turned out, that school only went to the eighth grade, so I needed to go to another school in the ninth grade. I picked one that I thought was just like the first one. But no. Possibly because there were just adolescents rather than younger kids. Also, because it had a lack of structure, and this points out another general point, that in order for a community to be strong and nurturing, it cannot lack structure. There has to be some sense in which misbehaviour is prohibited, monitored, and something is done about it if you misbehave. If a community lacks that, then you're going to get multiple forms of disruptive self-serving behaviours. So that second school, because it lacked that kind of structure, came into a *Lord of the Flies*-type society. There wasn't physical violence, but there was lots of psychological violence, lots of drugs and stuff like that. So, when it comes to communities, they must have the right ingredients to offer that nurturing environment. I'm happy to know that yours did.

JW: It did, yeah. And I agree, I think boarding school can either be *Swiss Family Robinson* or *Lord of the Flies*. It's a fine line, but it all depends on the way they're structured and controlled.

DSW: Really, there's a take-home message here because that applies to all groups of all kinds. So, what we just said about boarding schools applies to any kind of group – we'll get back to that. All groups, in order to be cooperative units, must have certain design features. And when they lack them, then they become like the *Lord of the Flies*.

JW: Yes. We'll get back to that, and that refers, I guess, to Elinor Ostrom's core design principles. I want to

ask you about how you first encountered the theory of natural selection. For me, natural selection is one of those elegantly tautological ideas that has so much explanatory power. I can't remember where I first heard this, but you can think of the power of an idea as being how much it explains divided by how much it assumes. Dan Dennett once called natural selection the best idea that anyone ever had. Maybe that's going slightly too far, but I certainly wouldn't call it hyperbole either. I'd love to know, do you remember the moment you first fell in love with the idea such that you decided it was worthy of building an intellectual career around – was it a moment, or was it a gradual process?

DSW: In a way, it happened in my sophomore year in college. I love being outdoors, I love studying animals and things like that, and so I did that even before I went to college. By the time I got to college, I was undecided as to whether I should go into philosophy, music or biology. By the first year of college, I swung in the direction of biology. It was at that point that evolution just came very naturally to me. I've written elsewhere that I read Ernst Mayr's *Animal Species and Evolution*, which was an 800-page tome, in a week. It was just an idea that I took to. I was not a good student – all of my schools are my safeties, basically. I applied to the best schools and was rejected by all of them and then went to my so-called safety schools. Although those turned out to be very good. At the University of Rochester, I did poorly in my lecture classes, but I was lucky to work in the laboratory of a professor named Conrad Istock. There's such a difference between undergraduate education and graduate education: undergraduate education should be like graduate education. There's no excuse for undergraduate education other than just a need to teach students in mass numbers. But once I was in a lab able to do my own inquiry, that's where I thrived and just began soaking up evolution and basically functioning like a graduate student starting in my sophomore year in college.

JW: For people who aren't familiar with the theory, tell us the three conditions required for natural selection.

DSW: There are three ingredients to the theory of natural selection: first, organisms vary in just about everything that can be measured. Second, those differences make a difference in terms of survival and reproduction. And third, offspring tend to resemble their parents. Darwin didn't know why, but he did know that. Put those three ingredients together and you have your conclusion that populations do not remain constant over time – they change. And traits that contribute to their survival and reproduction accumulate in the population. So, it's by this process that organisms become well-adapted to their environments. It's that simple.

JW: Should we think about natural selection and evolution as synonymous terms?

DSW: There is a big difference. Evolution you can broadly define as change. Natural selection is one process of change, but there are others. Drift is also a process of change. You can have differences – let's say that you had differences, things that you could measure, that don't make a difference. They don't stay the same – just chance will cause them to change in their frequency. Then there's a whole bag of other things. A trait is not an atomistic entity. A trait is the result of development. It's linked to other traits. It's not as if each and everything you can measure in an organism has or requires a separate adaptive explanation. So, natural selection is certainly the centrepiece of Darwin's theory of evolution, but evolution will always be a broader category than natural selection.

JW: So evolution evolves by a number of processes like random drift, byproducts like spandrels, but the most important one for us to understand, at least for this conversation, is evolution by natural selection?
DSW: The reason that it has a special status is because you can reason on the basis of natural selection in a way that doesn't require any knowledge of the physical makeup of the organism. The way I often state this in a class is this: picture a standard desert and I'm going to ask you the question, 'What colour are most of the species in the desert?' And of course, everyone says brown, and then why would that be? Well, unless you're a creationist, individuals in the desert vary in their colouration, but the ones that blend in are the ones that survive and reproduce. How about a white desert? Some deserts have white sand. How about a black desert? Some deserts have black sand. So, what are you doing? You are actually making a very intelligent guess, which turns out to be true, about the properties of organisms, without needing to know anything about their physical makeup – not their genes, not their exteriors – because what natural selection does to the physical makeup of organisms results in heritable variation – that's the degree to which it becomes a malleable clay, which is moulded by environmental forces. So, it's on the basis of the environment that you predict the properties of the organism, not the basis of their physical makeup. This provides what I call a third way of thinking. Before natural selection thinking, you only have two ways to explain something: its physical makeup or some theological explanation.

The true significance of natural selection is that it provides a way of understanding the properties of organisms without needing to know anything about their physical makeup. And that makes it a holistic explanation. I hope we actually get to the distinction between reductionism and holism. Reductionism says the only way to understand something is to take it apart and study its parts. Holism says, the parts permit the whole to have its properties, but they do not cause the whole to have its properties. That's the quintessential holistic statement. Natural selection thinking says exactly that: that the properties of organisms are moulded, not by the parts, but those properties are caused by the environmental forces. This is sometimes called 'downward causation'. It really maps very nicely onto the reductionism/holism distinction and provides a basis for holistic thinking, which is rock solid, scientifically justifiable.

JW: I want to ask you another question about your time as a student. You've mentioned Ernst Mars' book, *Animal Species and Evolution*, and you mentioned Ed Wilson's book *Sociobiology*, were there any other life-changing books you read while you were at college or are those the only two in that category?

DSW: I entered school as an undergraduate student at the moment that group selection had been rejected, so I don't remember whether I read Wynne-Edwards' book *Animal Dispersion in Relation to Social Behaviour* cover to cover, but it was definitely in the air. So even as an undergraduate student, I had encountered Wynne-Edwards. I don't think I read George C. Williams' *Adaptation and Natural Selection*, which came out in 1966. But these things were also in the air. So, my first encounter with group selection and Wynne-Edwards was when I was an undergraduate student, and my first effort to show how group selection could work was actually my undergraduate thesis.

Wynne-Edwards speculated many times about group selection. For one of them he tried to explain vertical migration and zooplankton. So, with zooplankton, the adults migrate diurnally, meaning they go down into the depths during the day, probably to avoid predation. The young zooplankton, because they're small, stay up on the surface. Wynne-Edwards interpreted this as a form of mass parental care, that the adults were collectively leaving the food-rich zone in order to provide food for their offspring. This probably isn't true, but I took it as my challenge. And what's so interesting about zooplankton, as I learned, is that even though you'd think that in an aquatic or marine environment everything should be well mixed – after all, what could be a better mix than an ocean? – the distributions of plankton in the ocean are amazingly patchy. This is because the many currents and the waves have a way of aggregating, they don't just disperse. For group selection there have to be groups, multiple groups, and they have to vary. Patchiness in the ocean provides, perhaps, the kind of patchiness that might have enabled a group selection process.

With currents, you could imagine that the adults migrate down into the deeper water and when they come up again, they are probably horizontally separated from their own offspring, because of all the different currents at different levels. So, if the adults want to segregate themselves horizontally from their offspring, all they'd have to do is migrate vertically and that would be accomplished. There was actually a logic to Wynne-Edwards' theory, and that's what I worked out as an undergraduate student with very primitive computer simulations, in my third or fourth year in college.

JW: Now you've brought up group selection we probably should speak about it, because there are some people who won't be following what it actually means. I'm going to define it very carefully with your help. I thought we could start by discussing what group selection is not, then move to the intellectual history of group selection, and then finally get your elevator pitch for multilevel selection. Let's begin by discussing what group selection is not. I can think of at least three misconceptions. We can go into each and get your comment and then you can add anything I've missed.

The first and most casually incorrect idea of group selection is the one that George C. Williams picked up on in the book you just mentioned, *Adaptation and Natural Selection*. He highlighted the fact that sometimes the term is redundantly used to refer to an individual trait that just happens to be shared by members of a group. And he famously gives the example of a fast herd of deer being just a herd of fast deer. What did he mean by that?

DSW: Yes, that's an important distinction. So, imagine that there are no social behaviours at all. There are just slow deer and fast deer. Nevertheless, they're clustered into different groups. That means that some of these groups are faster than others just by virtue of their composition. William said correctly no group selection is going on here. There's a difference between groups, but that's not group selection. Now let's contrast that to something that is group selection. I'll give you a real example: territorial defense in lions. Imagine a lion pride of females, about six or seven females. There's a territorial threat, another pride is trying to infringe on their territory. You have to fight, right?

What happens if there are some individuals that hang back, then their fitness is going to be greater than the ones that fight, at least within the pride. So now, you have a social behaviour. The difference between a social behaviour and a non-social behaviour is, a non-social behaviour like running fast only influences your fitness. It doesn't influence anyone else's fitness. A social behaviour influences not only your own fitness but the fitness of others around you. So, bravery in a fight versus cowardice in a fight, that's consequential, not just for you, but for the others in your vicinity. Group selection is about social behaviour, it's not about non-social behaviour. Group selection makes no sense for non-social behaviour. So that was the distinction that Williams was making in that distinction with the fast herd of deer.

JW: So, a trait shared by a group did not evolve by group selection if the trait only affects individuals, and it's not a social trait. Now regarding the next thing that group selection is not – can you talk about 'for the good of the group' thinking, and animals that people might perceive to be sacrificing themselves for their species?

DSW: Group selection is about traits that are for the good of the group. That's the quintessential group selection question.

JW: Naive group selection is a little bit broader than what you think to be the correct form for the good of the group thinking, am I right?

DSW: They say that history gets told by the victors – in the rejection of group selection, others started talking about naive group selection. I think we should first talk about what group selection is, and then talk about what might qualify as naive group selection.

I think that group selection begins with Darwin, and Darwin at the beginning thought that his theory of natural selection could explain all aspects of design that had been attributed to a creator. But gradually he realised that that was not the case, and the exception were all of the traits associated with morality and virtue. I play this game with audiences all the time – I ask them, and I'll ask you, to describe for me the morally perfect individual. What are the adjectives that would be used to describe the morally perfect individual?

JW: Altruistic, prosocial, doesn't lie, sacrifices for the group, kind, generous.

DSW: Yeah. That's right. One hundred per cent of the time I got that answer. Now, if you think of those social behaviours from an evolutionary perspective, what's the alternative to these things? What's the opposite of the morally perfect individual? Spit out some adjectives for evil incarnate.

JW: Selfish, thieving, lying, stealing, shading, murdering.

DSW: Imagine a Darwinian contest between these two classes of traits, and what you find is that the virtuous traits do not have the advantage. They are inherently vulnerable to the traits that we associate with evil. If we just state that a little more formally, doing something for others or for a group as a whole inherently requires time, energy and risk on the part of the individual actor. For those individuals that are not virtuous, they accept those social benefits without providing them. Therefore, in any group that contains more prosocial and less prosocial individuals, the advantage goes to the less prosocial individuals.

Darwin's theory did not have the capacity to explain all of the behaviours that we associate as virtuous, and this was a dilemma of the first rank for him. How could he explain these behaviours? And the answer was not far to seek. It is pretty obvious that although at the most local level – at the level of the group of individuals that are socially interacting with each other – selfishness beats altruism, a group of altruists will robustly out-compete a group of selfish individuals.

As soon as you imagine that the evolving population consists of multiple social groups, 'tribes' as Darwin put it, then we can explain the evolution of altruism in all of its forms. Any trait that's for the good of the group will be positively selected by between-group competition. That was why Darwin needed the theory of group selection in order to explain this very important class of traits that are for the good of the group. That was the origin of group selection theory, and the thread that continued through the whole history of the subject. We could follow that thread all the way through to the birth of population genetics. The fathers of population genetics were Ronald Fisher, JBS Haldane and Sewall Wright. These were the people that put the theory of evolution on a mathematical foundation, basically building models of Mendelian inheritance. They had a lot of work to do just to build the whole mathematical framework for studying evolution. Against that background, this particular problem of altruism, as strange as it might seem, did not loom very large as it was not a central issue. There was too much else that they had to do. But, nevertheless, each one considered the problem briefly and in all cases they basically recapitulated Darwin's thinking: How do we explain a thread that is good

for the group but selectively disadvantageous within groups? The only way we can do it is by positing a multi-group population and some sense in which the more altruistic groups contribute more to the gene pool than the less altruistic groups.

Each did so in a different way with different specific conceptions of groups. Against that background, now we can get to naive group selection, because not all biologists were as discerning as Darwin. Many of them didn't know much about population genetics. You have to understand the integration of the different branches of biology – today, we have ecology evolution behaviour, those are fused, we call that EEB. Obviously, population genetics is part of this integration, and so on. But back then in the first decades of the twentieth century when population genetics was just getting started, and was mathematical, there were all kinds of naturalists and biologists who studied nature who didn't know anything about that. Quite a few of them thought that behaviours could evolve for the good of the group without requiring special circumstances. That basically natural selection produces adaptations at all levels for the individual, for the group, for the ecosystem. So, they were not very discerning about the special conditions that were required. In retrospect, we can call that naive group selection and yes, there were naive group selectionists.

As for the contribution of George C. Williams, here's the story of how he wrote *Adaptation and Natural Selection*. He got his PhD at UC Berkeley, and received training in population genetics. Then he did a post-doc at the University of Chicago, before Wynne-Edwards wrote his book. He went into a lecture by a termite biologist named Alfred Emerson, a very well-known termite biologist, and of course termites are the quintessential superorganism. Today, we know that the eusocial insect colonies are definitely units of selection, but Emerson generalised beyond that; he thought of all of nature like a termite colony. This disgusted George Williams. He left that lecture and said, 'If this is biology, I want to do something else like become a car salesman.' So, George set about writing a book that critiqued this kind of sloppy thinking, that behaviours evolve for the good of the group. It was only while he was writing that book that Wynne-Edwards published his book. So, George's book was not a response to Wynne-Edwards' book. They were spaced four years apart. Wynne-Edwards was published in 1962, Williams in 1966. So, Williams had plenty of time to add Wynne-Edwards to the list of naive group selectionists.

George was trying to educate biologists in population genetics theory, and to cause them to think more rigorously about lots of things – not just group selection – and in the process he also came to the conclusion that not only does group selection require special conditions, but those conditions are so special that it hardly exists at all. It could exist in principle but, in practice, he claimed almost everything could be explained as a product of within-group selection. Lower-level selection is almost invariably stronger than higher-level selection, was the empirical conclusion that he came to.

JW: Got it. So that's really what I wanted to bring out in terms of what group selection is not – it's not the sloppy thinking that George Williams reacted to, that between-group selection easily trumps within-group selection, but you gave us some necessary background. Thank you. That also leads to another thing group selection is not, which I want to highlight and underscore here, which has been implicit in everything you've said. But I think for people who aren't familiar with evolutionary biology, it's important to point this out – and that is that group selection isn't mutually exclusive with, or some sort of alternative framework to, gene-level selection or individual-level selection, and really what you mean when you say group selection is multilevel selection. Do you just want to make a comment on that?

DSW: If you think about what we've already said, group selection is a series of nested comparisons. First, you compare the fitness of individuals within groups, and it's at that level that selfishness beats altruism. Then you compare the fitness differences between groups, and a multi-group population. That's where altruism beats selfishness. But you're always comparing the fitness of units within the next higher unit. Now we can frameshift downward and we can compare the fitness of genes within individuals. We have cases such as meiotic drive, and certainly cancer, in which genes can be more fit than other genes within the same individual. That would now be extending this nested fitness comparison: units within higher units.

What is the fitness of genes within individuals? What's the fitness of individuals within groups? What's the fitness of groups within a multi-group population? It's in this sense that gene-level selection and individual-level selection and group-level selection are distinct from each other. They're non-overlapping. But there is another sense of gene-level selection and individual-level selection. Take a gene that's not a selfish gene in the first sense – a gene that basically just makes you fitter as an individual, and all the other genes within you. There's no difference in the fitness of genes in this scenario. The gene is benefiting everyone. Nevertheless, it evolves by virtue of the fact that the individual is fitter than other individuals.

You can still say that that gene is fitter than other

genes – not within the individual, but all things considered – given that it evolves, and anything that evolves is fitter than what doesn't evolve. So there's a second meaning of selfish genes: not selfish in the sense of fitter than other genes within the same individual, but selfish in the sense of fitter than all things considered. It's here where that concept of gene selfishness, which is Dawkins's concept, overlaps with group selection and with individual-level selection. In other words, a trait could evolve by group selection – a gene for altruism can evolve by group selection. But when it does, that gene is fitter than the genes that didn't evolve. So, you can call it selfish just by virtue of the fact that it evolved.

Here's where we get into these different frames of comparison, and it introduces us to the concept of equivalence. There seem to be two different ways of accounting for evolutionary change, and they're both correct. They both correctly predict what evolves in the total population, but you can erroneously treat one as an argument against the other, and that's where all the trouble begins. That's where the confusion starts and was endemic in the rejection of group selection – it was a confusion of this sort. I don't know if that's going to be clear – it's a very important point to establish, however.

JW: I agree. And I think it will be clear if not now, then momentarily. Let's turn now to when group selection fell out of favour. Tell us about how that happened?

DSW: The main thing I want to say about that is to situate it in very broad cultural terms, with what I think is the advent of individualism as a cultural phenomenon. Let me set the stage for this a little bit. If you go back to the first half of the twentieth century, and the nineteenth century, the idea of society as an entity in its own right, which cannot be reduced to lower-level processes – not biology, not even psychology – was a very, very common idea: that society is an organism in its own right.

Durkheim is associated with this. The birth of the whole field of sociology established itself, because we need to study society on its own terms; it just can't be reduced. That led to a tradition called functionalism, which basically explained cultures and societies on the basis of how well they worked for the group. That was the primary explanation. You could find it in social psychology and anthropology and so on. It was the dominant tradition, but then it fell out of favour for a good reason. What was that reason? It was too axiomatic – it was as if every feature of a society or culture had to be explained as for the good of the group. So, it deserved to be rejected as too axiomatic, but what replaced it? What replaced it was often called individualism: a commitment to the idea that the most fundamental explanation is at the individual level. You do not understand something unless you understand it in terms of individual thoughts and actions. So, this became prominent across disciplines. In economics it's called rational choice theory, homo economicus, the rational actor. The economic profession is penetrated by individualism – explaining economic phenomena in terms of individual self-interest. It's called methodological individualism in the social sciences.

In everyday life, we have people like Margaret Thatcher saying, 'There's no such thing as society, only individuals and their family.' So there actually is nothing social, other than a consequence of what individuals do in order to maximise their utility or their self-interest. Well, isn't it curious that at the same time these things were happening is when evolution had its individualistic swing? And that evolution has decided that really everything has to be explained as a form of lower-level selection. Williams called it the theory of individual selection, and then Dawkins notched it still further down to a theory of gene-level selection. In some ways, it seems that what took place in evolution was marching in lock-step with broader cultural trends. I think that's a very important point to make. We cannot explain what happened in the field of evolution in isolation from what was happening elsewhere. Social historians are needed to explain in detail just what was going on and what was causing what.

JW: So, this normative worldview of radical individualism, the sort of Ayn Rand view of the world, permeated the sciences, including evolutionary biology, and struck a deep resonance with the idea of individual-level selection?

DSW: Absolutely.

JW: Is there anything in the writings of the gene's-eye view or the individual selectionists that would be evidence for that theory?

DSW: I don't think this was necessarily ideologically driven. I think part of it is the advent of mathematical models, because mathematical models almost by definition are reductionistic and simplifying, and are going to be individualistic in how they are constructed. There's a cycle that I don't think is inevitable but happens more often than not – that as soon as you think of things mathematically, there's a simplification stage where you build these really simple models. You try to explain as much as you can with them. Then, gradually, there are things that you cannot explain with those models, and those models become more and more complex. So,

you begin appreciating complexity. Then you try to understand it with mathematical models, but then there's lots leftover, and at the end of the day you are appreciating complexity again. Just think that the whole study of complex systems, complexity theory, didn't really begin until the sixties or the seventies. We required computer-simulation models, which in turn required the advent of desktop computing. You couldn't actually study complexity until you had widespread access to computers.

Let me give you two quotes to give you the tenor of the times. One of them is from Bret Weinstein's mentor Richard Alexander. One is from Michael Ghiselin, from his book *The Economy of Nature and the Evolution of Sex*. What you have here is that evolutionary theorists were actively looking to economics. First came economics, rational choice theory, and then came the evolutionists emulating the economists. That was true for John Maynard Smith, for example, with evolutionary game theory, emulating economic game theory. At the time, people were so excited because isn't it exciting that our evolutionary models are kind of mapping on to economic models? I mean, the main difference is that economic models talk about utility, and we talk about fitness maximisation. But other than that, they're the same. That was the zeitgeist. So here is the notorious quote from Ghiselin, published, I think, in 1974: 'The economy of nature is competitive from beginning to end. The impulses that lead one animal to sacrifice himself for another turned out to have their ultimate rationale in gaining an advantage over the third. Where it is in his own interest, every organism may reasonably be expected to aid his fellows. Yet, give it a full chance to act in his own interest, nothing but expediency will restrain him from brutalising, from maiming, from murdering his brother, his mate, his parent or his child. Scratch an altruist and watch a hypocrite bleed.'

JW: Wow.

DSW: And here's the quote from Bret Weinstein's mentor, Richard Alexander, who was a great scientist. Although he insisted on seeing things through an individualistic lens, including all of morality, it's not to say that he didn't make contributions. Here is Alexander, in his 1987 book, *The Biology of Moral Systems*. 'I suspect that nearly all humans believe it is a normal part of the functioning of every human individual, now and then, to assist someone else in the realisation of that person's own interests to the actual net expense of those of the altruist. But this greatest intellectual revolution of the century, in other words, the individualistic perspective and evolutionary biology, tells us that despite our intuitions, there is not a shred of evidence to support this view of beneficence and a great deal of convincing theory suggests that any such view will eventually be judged false.'

The message here is that, although we think that we act on behalf of others and that that could be accepted at face value, actually that's not true. And that the greatest intellectual revolution of the century is to tell us that everything that we associate with morality can be understood as a form of self-interest. So, there you have the individualistic perspective in full swing. What I find so remarkable is that if we placed that against functionalism, if we rejected functionalism for being axiomatic, as we should, then individualism of this sort is also axiomatic. We must explain everything as a form of individual self-interest.

What's special about what's happening now with multilevel selection theory and other theories – because we have to acknowledge equivalence – is that we now have something that is not axiomatic. We could actually, on a case-by-case basis, look at some product of evolution and say, for example, in this case, it evolved by within-group selection, so it deserves to be called an individual-level adaptation. In that case, it evolved by a group selection. It deserves to be called a group-level adaptation. That means it's no longer axiomatic. That is, I think, a very important point to make.

JW: It's incredible the parallels between where evolutionary theory went wrong and where neoclassical economics went wrong. Take macroeconomics, for example. It's not just that it assumes all the units or the individual agents in the economy are selfish, utility-maximising machines, but it also overlooks the emergent phenomena of how they act and interact in groups. Things like conformity, herding, the psychology of bubbles, which neoclassical economics was blind to for so long.

DSW: Yep, totally. And it goes beyond even those two fields. It extends to the social sciences – social psychology got completely taken over by the individualistic perspective – so it's broader than any of those, but you're absolutely right. In this sense, I think evolutionary biology has advanced beyond economic theory. Economic theory is still stuck with individualism. Even behavioural economics, which has certainly advanced over rational choice theory, is still individualistic. It's still talking about individuals as now basically being guided by heuristics and biases rather than rational choice. But it's still very much an individual level of description. Whereas evolution, to the extent that it embraces multilevel selection theory, has now really started to explain phenomena as a group-level adaptation, including

such things as religion, which we'll be getting to.

JW: I think you make a good point about how even behavioural economics is still grounded in an individualistic paradigm. Daniel Kahneman has the metaphor of system one and system two: system one being the fast intuitive thinking, which results in the biases; and system two being this slower, more effortful thinking. I often like to hijack that metaphor and talk about system three, which is the social influences between people. That's a totally different category altogether.

DSW: Exactly. The idea that we're more like ant colonies than we have imagined in the past. That's the degree to which our individual brains evolved in the context of groups. We're like an ant in an ant colony. That is true in its own special way to a remarkable degree. That is beyond the imagination of many people.

JW: Or to borrow Jon Haidt's metaphor. We're 90 per cent chimp and 10 per cent bee.

DSW: Yeah. I'd quibble with the proportions–

JW: You'd make it more in favour of the bees?

DSW: Yes.

JW: In this intellectual history of group selection now swaying back to individual-level selection and inclusive fitness, beginning with JBS Haldane and W.D. Hamilton and George C. Williams, I want to rejoin the story where you enter the picture. You published your first academic article on group selection in 1975. It was titled 'A Theory of Group Selection.' There's a cool story around that because in 1974, you got Ed Wilson, the world expert on insects and ants, to sponsor the paper. I want to ask you about that, and I want you to tell us the story of when you burst into George C. Williams' office at Stony Brook and what happened there?

DSW: I told you that I tinkered with group selection as an undergraduate student, and that was on zooplankton, then I went to graduate school. Once again, my safety. I didn't get into any other college but my safety, Michigan State, which turned out to be a great choice. I was intending to be a zooplankton ecologist, not studying group selection or vertical migration. I was studying issues relating to feeding and the like. I met Ed Wilson for the first time at Woods Hole, which is a great marine biological laboratory. I was taking a course in marine ecology and he was one of the teachers. So, this has nothing to do with group selection. I was studying feeding and copepods, but that was my first encounter with Ed Wilson. I was most of the way through my thesis when a paper on vertical migration came out and it caused me to dust off my old ideas. By then I'd become a modeller. Not only was I studying zooplankton, but I had become a little bit proficient at building mathematical models. Very simple algebraic models, nothing sophisticated. Nevertheless, I started to build a model of group selection that suddenly became very general, way beyond zooplankton. And I immediately understood its significance: that here was a quite general explanation of how group selection could actually be a strong evolutionary force.

I must have been a bold person because I contacted Ed Wilson on the spot and said I wanted to speak with him. And he said yes; he's a very gallant Southern gentlemen and was nurturing of students. Then on my way, I did visit George Williams at Stony Brook, and I did burst into his office and say, 'I'm going to convince you about group selection.' And he did offer me a post-doc on the spot, which says something very nice about George. That actually was the beginning of a lifelong friendship with George C. Williams. This is how science should work at all times, where intellectual adversaries actually can be the best of friends.

I had already cultivated a post-doc with someone else at Harvard, so I was not about to do a post-doc with George Williams. Then I went to Ed Wilson and Ed is, of course, a very busy person. He had allotted me a fixed amount of time, and he always shows people his ant lab and stuff like that. So, we took a tour of his ant lab at the Museum of Comparative Zoology. Then he sat down in a chair and put me in front of a black board and said, 'You have 20 minutes.' I talked like an auctioneer. He agreed to look at my paper and sent it out for review, and it ended up being published in the proceedings of the National Academy of Science.

JW: Wow.

DSW: Then that created a dilemma for my PhD advisor, because this paper on group selection had nothing to do with the rest of my thesis. My PhD advisor, a pretty spirited man named Don Hall, decided that if my PNAS paper was good enough for the NAS and Ed Wilson, it was good enough for a PhD thesis. So that became my entire thesis.

JW: How old were you when that paper was published?

DSW: I would have been 24.

JW: Wow. Well done.

DSW: I met a lot of people. That was, in part, because it was a really generative time. This was the 1970s, the decade where *Sociobiology* was published. This was the decade where Dobzhansky said, 'Nothing in biology makes sense except in the light of evolution.' This was the decade that Tinbergen and Lorenz and von Frisch got the Nobel Prize for their work. So, what was happening was these historically separate fields of ecology, evolution and behaviour were fusing. It was like the beginning of rock 'n' roll, you might say. Mathematical models were just coming into their own. It meant that if a graduate student was in the middle of this, then there were so many things to discover. So many models to build. So many studies to do. For example, the concept of optimal foraging theory: that you can study foraging in terms of fitness maximisation. How would a predator forage for prey if it was attempting to maximise its energy? Let's build a model of that. This led to predictions that you could test.

This transformed biology from sort of a natural history, descriptive typological phase to a predictive phase with models and testing. That's what I was lucky enough to be present for. We know that there are times when something big starts, like rock 'n' roll, and the people that are there become the classics. And then what follows becomes a little bit derivative. I attribute some of this to those times. Quite a few people made foundational contributions as graduate students.
JW: I want to quote a couple of sentences from your famous 2007 paper with Ed Wilson, who you eventually converted to the cause and co-authored some influential papers with. I want to quote the way you and Ed define multilevel selection just to solidify the concept for people before asking you about altruism. You and Ed write that, 'Natural selection takes place at more than one level of the biological hierarchy. Selfish individuals might out-compete altruists within groups, but internally, altruistic groups out-compete selfish groups. This is the essential logic of what has become known as multilevel selection theory.'

Of course, the quintessential battleground for gene-level selection versus multilevel selection is altruistic behaviour. I want to ask you a few questions about this, and I thought maybe we should begin by briefly defining what altruism is. The person who actually coined the term altruism was Auguste Comte. How did he define altruism?

DSW: Isn't it strange that the word altruism didn't even exist until the mid 1800s? That seems shocking.

JW: Do you know what word they used before that?

DSW: I think there were words for community and things like that. Comte was one of the first big thinkers trying to create a whole cosmology that was not religious. He called it the religion of man. Herbert Spencer was another person who was trying to do the same. Comte coined the word altruism, in part, to contrast it with Catholic thought. I mean, if you're a Christian, then you do good deeds or you go to hell. It's like a selfish motive to be altruistic. If you ask – and this is true with most religious systems – how does the religious cosmology motivate people to be other-oriented, it's in part with individual incentives, not just an afterlife, but other benefits, including worldly benefits. So, Comte coined altruism as something that was like a purer motivation, something that was more genuinely other-oriented, as an end in itself. So that was roughly the context for the word to be coined.

JW: How have evolutionary biologists co-opted and defined this word?

DSW: Well, one point to make is that there are two major definitions of altruism, which need to be distinguished and were not originally. The first for multilevel selection is based on a comparison within groups. It's a relative fitness comparison. If I do something that benefits others, or the group as a whole, and that places me at a relative fitness disadvantage, that's altruistic. Let's say I do something that's good for everyone in my group, including me. It gives a fitness benefit of one, and it costs me a little bit, 0.1, so that means that my fitness is 0.9 and everyone else's fitness is 1. So, I've increased my absolute fitness, but I've decreased my relative fitness. That makes me an altruist when altruism is defined in terms of relative fitness.

Now the other definition of altruism is based on absolute fitness. I'm not an altruist unless I actually benefit someone at some net absolute cost to myself. So, there you have two definitions of altruism. The example I gave counts as altruistic according to the first definition, but not according to the second. When Hamilton constructed inclusive fitness theory, it was based on absolute fitness.

So, it's hard to compare inclusive fitness theory and multilevel selection theory because they actually employ different definitions of altruism. We can say that now, but at the time, that was not at all understood. You can call that naive. If we're going to call group selectionists naive for not being sufficiently nuanced about the special conditions, then we're getting into territory here that were genuine confusions that required many years for smart people to sort out. I want to make the point that there's something about group selection that's very subtle. The idea that a trait can be selectively disadvantageous in every group where it exists

but still evolve seems impossible. It's a statistical paradox called the Simpson's paradox and it has applications outside of evolutionary theory. There's something genuinely subtle about some of these distinctions that required very smart people quite a lot of time in order to work through.

JW: That's a crucial distinction, relative and absolute fitness.

DSW: Absolutely crucial.

JW: What I want to do now is briefly canvas some of the individual selectionist explanations of altruism. I can identify three, I think this covers the field – we have kin selection, reciprocal altruism and indirect reciprocity. Does that cover the field?

DSW: Let's say so. When you think of the main frameworks that pass as alternatives to group selection, those are the main ones.

JW: Great. So just so we know what we're up against, can you give us a brief outline of each of those? Let's start with kin selection.

DSW: Well, in its original formulation, kin selection refers to genealogical kin, and genes that are identical by descent. Hamilton created a model that calculated something called inclusive fitness – it was the effect of an action, not just on the individual, but on all of the genes that are identical by descent and the individual, and then the recipient of the action. Let's say that I'm an altruist – I do something, it's a negative for me, it's beneficial for the recipient. But what's the probability that the recipient has the same identical gene by descent? If it's a non-relative, that probability is zero. If it's a relative, then there is some probability of sharing the gene, which is basically proportional to the degree of relatedness, so if it's a cousin, it's less than a brother. If it's a brother, it's less than an identical twin. If it's an identical twin, you know that the recipient has the same gene as the actor.

So, Hamilton's rule basically calculates the effect of the behaviour on the actor plus the recipient, weighted by the probability – that's what the R coefficient is, the coefficient of relatedness. And it asks the question, when is there a net increase in the altruistic allele? Now here we have, again, an absolute fitness criteria: when does this behaviour increase the net increase of the altruistic allele? That's not comparative. Nevertheless, given certain other assumptions, that does predict what evolves in the total population. So now we could say that altruism is a form of inclusive fitness maximisation. Altruism is actually the individual maximising its own inclusive fitness. So, you permuted altruism to a form of selfishness. It created a sensation and was regarded as an alternative explanation – that we don't need group selection now because we can explain altruism with inclusive fitness. At that time it was confined to genealogical relatives.

JW: So, kin selection explains why altruistic behaviours towards relatives would evolve by gene-level selection. But of course, humans are altruistic towards people who aren't related to them in the gene pool, but the individual selectionists had an answer to that too. Bob Trivers came along with reciprocal altruism. How did that theory work?

DSW: The idea there is 'I scratch your back, you scratch mine' – that altruism can pay if there's a return benefit. In the case of kin selection, that's not required. A single altruistic act evolves. It's not reciprocated. But the reason it evolves is that the recipient shares the altruistic gene. So, a single act increases the copies of the altruistic gene. Now, if that's not the case, if you're interacting with a non-relative, then the only way for an altruistic act to evolve is for it to be reciprocated. It leads the recipient to repay the kindness. It's at that point that you can explain the evolution of altruism among non-relatives. Now, next we're going to get to indirect reciprocity.

JW: That was Dick Alexander in 1997? Bret Weinstein's mentor?

DSW: That's right. We know that indirect reciprocity exists in human life. It's kind of an intuitive idea: you're nice to me and I'm not nice directly back to you, but I'm nice to somebody else. Somehow, some kind of circle exists. So, if you're an indirect rather than a direct, if I'm nice to you, somebody is nice to me, not you, but somebody, because everyone's paying it forward. That's the idea of indirect reciprocity, describing it in words.

JW: I want to ask you now, why does multilevel selection provide the better explanation of altruistic behaviour?

DSW: In the spirit of equivalence, I won't claim that it provides a better explanation because I'm happy to acknowledge that even the selfish-gene perspective is insightful. So, if we're really going to acknowledge the benefits of multiple perspectives, let's be true to the concept of equivalence.

JW: Fantastic. I have only a few more group selection-related questions here. One of them is in relation to a common critique you hear of group selection,

which I've heard advanced by both Dawkins and Steven Pinker. That is to describe this distinction between what Dawkins originally called replicators, which are the genes and their vehicles, which are the phenotypes or the bodies that they occupy. And to then sort of pillory group selection by saying that groups can't be replicators. I think Pinker once wrote in his edge.org article, 'The False Allure of Group Selection.' It's not like the Roman Empire produced a lineage of baby Roman Empires, so it's incoherent to think of groups as being able to be selected because they're not replicators in the same way that genes are. What is your response?

DSW: Well, basically, it's the averaging fallacy – group selection never envisioned groups as replicators, it envisioned groups as vehicles. I mean, the vehicle concept is basically giving back with one hand what it took away with the other. Selfish gene theory takes away groups as units of selection, as replicators, and then gives back groups as vehicles of selection. Group selection has always been a question about how genes evolve. Genes are the replicators. In all group selection models, genes are their replicators. The question is how do they evolve? Do they evolve by virtue of an advantage within groups or by virtue of advantage between groups? So it is an elementary error to use – I can't help but say that it is. And shame on Steve Pinker for making such an elementary error, and shame on the rest of the world for following him off the cliff. That's the best example of prestige bias I know. Steve Pinker says it and everyone follows him like sheep. I mean, it's just so discouraging, basically, because as scientists, we're supposed to be discerning, and the amount of followership that takes place is discouraging.

JW: I found his critique incredibly rhetorical. I think that's probably the best word to describe it.

DSW: Now, I mean a lot of the confusion is shared by people that are better informed. So, I think it's a legitimate zone of inquiry, just what we mean by groups. There are actually two major topics that need to be distinguished. One is altruism, which we've been talking about. The other is the idea of major evolutionary transitions. The idea that when a group becomes sufficiently cooperative, it actually becomes a higher-level organism. At this point, it takes on a boundary of skin and really becomes compartmentalised. It certainly becomes a group in a sense that's different than these much looser groups. Many people have that kind of group in mind for group selection as a whole. What they lose sight of is the other major question about group selection: how do altruistic traits evolve? The groups that are required for that need not have that kind of coherence at all. They need not be discreet. They can dissolve, but they have enough coherence so that they provide that counterforce that compensates for the local selective disadvantage. And if you have a good understanding of the history of the subject, then you would not make that mistake. But many people don't.

JW: Another error I think Dawkins and Pinker seem to commit is overlooking or ignoring evidence of behaviours which are incredibly groupish. Just to pick one example to illustrate what I mean. I wanted to ask you about shared intentionality. In his book, *The Righteous Mind*, Jon Haidt gives a very lucid defense of group selection. He presents it as like a criminal trial where he argues we should re-open the trial against group selection, and presents four major exhibits in defense of group selection. The second one is shared intentionality, the concept of which was advanced by Mike Tomasello in his study of chimps versus toddlers.

It's interesting to me because it really seems to be the first, as Haidt says, 'major Rubicon crossing for our species.' Yuval Noah Harari's book *Sapiens* is famous for holding up the development of language about 70,000 years ago as the first major Rubicon crossing, and describes it as the cognitive revolution, the first of the four major thresholds. But shared intentionality is interesting because you could argue that was really the first major turning point for our species, which occurred about 130,000 years before the development of language. And that it's more important because what is language if not an agreement as to what sounds mean in relation to their meaning. So shared intentionality is quite an important concept, and forms the bedrock of a lot of important aspects of our modern lives. For example, conformity is rooted in shared intentionality. How do you think about shared intentionality? And do you treat it as a strong piece of evidence in favour of group selection and humanity?

DSW: My answer is yes and no. If you're operating within the framework of multilevel selection theory, then shared intentionality is everything that you say. Individuals are now merging their intentions in a way that's providing a joint benefit. They're not generating fitness differences within groups – quite the opposite.

So shared intentionality is a form of cooperation. But when you flip to the other framework, there's nothing that you cannot explain as individualistic. If shared intentionality evolves, then those who engage in it are fitter than those who don't, all things considered. So, it's easy to provide a kind of individualistic rationale – just imagine that you're an individual that's suitably omniscient, and you are

evaluating your options: you're going to merge your intentionality or you're not. And it turns out it's better to merge your intentionality. So you do. It's selfish to merge your intentionality. Look at the way Dawkins talks about selfish genes. In actual fact, gene action is thoroughly merged with other genes. Genes don't have isolated effects. Genes are thoroughly melded with other genes. But that doesn't prevent Dawkins from describing them as selfish.

By the same reasoning, no matter how groupish humans become in their intentionality or their cognition, no matter how much they merge their minds with other individuals, you can still describe that as selfish whenever it works. That's where I think that you won't find anything that you can explain in terms of group selection that cannot be explained from this other perspective. That's another implication of equivalence, because we're describing the same thing in different ways.

JW: What's your relationship like with Dawkins?

DSW: No relationship. It's been extremely minimal. It consists of potshots in the literature. We've actually been in the same room only a few times. Whatever relationship exists is actually preserved in our respective publications. I do think that people should think seriously about why it is that a small number of people achieve iconic status. That's not the way science works at all. Dawkins, in particular, has not contributed to the peer-reviewed, scientific literature in many, many decades. And so why is it that he looms so large in the public imagination?

JW: What's your explanation?

DSW: Why do we personify things, for example? Look at the great figures: Freud, Skinner, so on. I think there is a need to hinge ideas onto people. And if the ideas are important, then that kind of gives everlasting life to the people that they're associated with, something along those lines.

JW: Yes. Max Planck famously observed that science progresses one funeral at a time. Do you think the group selection debate is a strong example of that?

DSW: For some people, but not others. There are differences that way. Compare Dawkins. Dawkins is definitely that sort. But Hamilton very freely changed his mind in the 1970s about group selection. Hamilton had a flexible mind, Dawkins not so much. It's not invariable by any means. There are young people with inflexible minds too. But it certainly is the case that people go to their graves without changing their mind.

JW: Do you think it might be relatively harder to change your mind if you write an international bestseller? You sort of build a prison for yourself with your own words.

DSW: Yes, true. But I'm trying to search for deeper explanations. One interesting point to make is that there are people outside of science that have worldviews that are very difficult to change. If we think about this in terms of people in general, and cultures in general, then the idea of stasis and getting stuck, and having certain temperaments, makes a lot more sense. What goes on in science is just a manifestation of what goes on more generally. All of us know people that are very individualistic in their perspective. They do see everything through the lens of individual self-interest. Anyone who thinks of selfishness as some grand explanatory principle must distinguish good from bad types of selfishness. Take Ayn Rand, for example. Everything for her was selfish, but she still distinguished between good forms of selfishness and bad forms of selfishness.

JW: Let's talk about religion. How do you define religion?

DSW: In the literature there are two major definitions of religions, and they are completely different from each other. One defines religions in terms of belief in supernatural agents. And the other is Durkheim's definition, which is religion is basically a system of beliefs organised around the sacred, that form into one single community called a church. So, Durkheim defined religions as a system of thought that basically helped organise communities, and he pinpointed the concept of sacredness as fundamental. He didn't say anything in that definition about supernatural agents. So there are your two definitions of religion.

JW: Now, why do religions exist in your view?

DSW: The first move I make is to say that we should be thinking not about religions per se, but about meaning systems. This gets back to Tomasello and the idea of shared intentions. That our capacity for symbolic thought is something that's truly distinctive about our species. When I write about that now I say that each and every one of us has a set of genes, that's our genotype. But we also have a set of symbols, let's call it our symbotype. Our behaviours are based at least as much on our symbotypes as our genotypes. A symbotype, the symbolic system that we have, might or might not count as religious. So let's first ask: what can we say about our symbotypes, our meaning systems? Then we can think about religion as a type of meaning system.

That, to me, is the most instructive thing for us to

do. Thinking about meaning systems, in general, what they do is they receive and process information leading to action. That's what a meaning system does. It organises the way we see the world, how we process information and, ultimately, how we act. That makes a meaning system like a brain: a brain sees information, processes it and results in action, and so does a meaning system. So, you can call a meaning system the brain of a culture. Then you can evaluate any element of the meaning system in two ways. First of all, how well does this belief reflect what's actually out there? Is it factual in the scientific sense of the word? And what does that belief cause people to do?

I call this factual realism and practical realism. Any belief could be scored on both bases. Now let's ask the question: how do meaning systems evolve? Well, it's on the basis of practical realism. Evolution is only sensitive to what we do. So, we can predict that meaning systems evolve basically on the strength of what they cause people to do. They're much more sensitive to practical realism than factual realism. How do we ever perceive the world the way it is? Well, that depends on the relationship between practical realism and factual realism.

When is it advantageous to see the world the way it really is, and when is it advantageous to basically believe in departures of factual reality? What's the trade-off between factual realism and practical realism? We can immediately see that that's a complex trade-off. Sometimes it's a positive trade-off, sometimes it's a negative trade-off. The idea of adaptive fictions, the idea that we're built and designed to invent, believe and defend falsehoods, is something that makes perfect sense for all meaning systems, not just religions.

Now we get to what strikes people as odd about religions. First of all, why do religious believers believe all that stuff that's not out there? And then why does it cause them to do such impractical things? Why would Abraham sacrifice his son for an imaginary God, for example. That's why religion more or less cries out for an explanation. But when you look at it as one kind of meaning system, then that problem exists for all meaning systems, not just religious meaning systems. All meaning systems should have adaptive fictions. I think that Dawkins and others of the so-called new atheists start out with a commitment to the idea that religions are bad, bad, bad. They're hostile towards religion–

JW: Because they're working off that definition of religion as a set of ontological claims, not the idea that religion is some sort of moral community.

DSW: First and foremost, I think they are hostile towards religion, and then they assemble their arguments in order to defend that claim. That means when they try to come up with an evolutionary argument, they're going to say a religion is a toxic by-product, or maybe it's a mismatch. Maybe it was adaptive in the past, but not the present. Whatever it is, it's bad, bad, bad. If you look at the titles of those books, *The God Delusion*, *God Is Not Great*, and so on and so forth. There is a real commitment to the idea that religion is bad, and if it ceased to exist altogether, then we'd all be better for it. Now, Dawkins certainly could, within his intellectual framework, think of religion as an extended phenotype. After all, he wrote the book. But he's not going to go there because he just does not want to think about religion as an adaptation in any sense at all.

JW: Is he not committing the naturalistic fallacy? If he calls religion an adaptation, he's therefore somehow saying that it's good. That would be the naturalistic fallacy. Dawkins is very smart. Maybe he's not committing the naturalistic fallacy. He just thinks that it's going to be more difficult to rid the world of religion if he admits that it is an adaptation.

DSW: Maybe. Let me just point out that as someone who's been studying religion as a scholar for 20 years now, I know the community of people that are doing the serious study of religion from an evolutionary perspective. And the new atheists are not among them. They don't even care about that literature. The disconnect between Dawkins, Dennett and Harrison, and the deceased Hitchens, using the mantle of science and evolution, when they don't care a fig about the actual serious study of religion from an evolutionary perspective. It is plain for anyone to see in any citation analysis. And it doesn't matter how intelligent somebody is. Very intelligent people are climate deniers and evolution deniers. It's not a matter of their intelligence. It's a matter of their commitment.

At the end of the day, it's going to be some version of equivalence. We're going to be talking about the same God damn thing, using different words. The fact is that religions, most enduring religions, succeed by creating strong communities. If you want to think of that in individualistic terms, well then, go for it. But a proper understanding will show some version of equivalence.

JW: I want to leave religion now and ask you about whether all of this – the group selection debate, evolutionary theory more broadly – is its significance just confined to the academic realm or are there insights that we can use to structure our societies and build a better world? There was an interesting shift in your career where you moved from not just

a focus on the academic debates, but to thinking about how we can construct our societies, and some of the practical implications of the ideas that you were studying. Do you remember when that point of inflection was for you?

DSW: Sure. The first step was when I created our campus-wide evolutionary studies program. I had a sort of epiphany that, although I was having fun as an individual scholar, travelling the world and interacting with dispersed colleagues, what would it be like to actually have my university become more literate about evolution? So, I created a program called EvoS that teaches evolution across the curriculum. That was step one. When EvoS was first established I began to think about my hometown, the city of Binghamton as like a field site. When you're an evolutionist, you do field work. You study organisms in their natural environment. So why shouldn't we be studying people in their everyday lives? That's what sociologists do. But it turns out when you approach it from an evolutionary perspective, it becomes somewhat of a new model. Because I was interested in altruism, I collaborated with our school superintendent and we gave a survey to all of the public school students in grades 6 through 12, and what that survey measured was two things. First of all, how prosocial are you as an individual? And secondly, how prosocial is your social environment? What kind of social support do you get from your family, neighbourhood, school, church and extracurricular activities? Five forms of social support. Evolutionary theory tells us that prosociality, being nice to others, in order for it to succeed in a Darwinian world, means those who give must get. There must be a correlation between the prosociality of the individual and the prosociality of their social environment. We found an amazingly high correlation, it was 0.7, between the prosociality of the individual and the prosociality of their social environment. If you take that correlation coefficient of 0.7, and you treat it as the R-term in inclusive fitness theory, that means that the phenotypic correlation between the individual and their social environment is greater than full siblings.

JW: Which is 0.5.

DSW: Which is 0.5. Isn't that incredible, in a modern American city? Although not all forms of social support are spatially based. We then mapped the students under their residential locations and created a map of prosociality in the city of Binghamton, it was incredibly heterogeneous. Basically, there were neighbourhoods in which these kids were clustered into highly prosocial or non-prosocial neighbourhoods. Then we did many other experiments validating the survey. So that's what it means to study a topic such as altruism in the real world. Knowing all of that, then what can we do? What kind of interventions can we do to actually increase prosociality in real-world settings? Now you get into more of an implementation mode, which I've been doing ever since.

JW: Do you think you could have arrived at these practical insights without group selection?

DSW: Sure. Again, honouring the principle of equivalence I could have made all those predictions on the basis of a correlation coefficient, so yeah.

JW: But I guess it adds strength to the case.

DSW: Oh yeah. In the first place, nobody thought of doing that. If you look at the three categories that you mentioned. Here, you have this great correlation of 0.7. Can you explain that by genealogical relatedness? Maybe a little, but not much. Direct reciprocity? I don't think so. Indirect reciprocity? Not that either. Basically, a lot of this has to do with institutions. The reason that I think mostly in terms of multilevel selection theory is because I find it much more informative.

JW: In your book, *This View of Life*, you have this great piece at the beginning where you talk about what a theory is and what a theory does. I wonder, are you aware of Daniel Kahneman's idea of theory-induced blindness?

DSW: Yes. He's making the same point I am. So why don't you articulate it–

JW: Honouring this idea of equivalence, I think it's probably the same point, but I just thought you might find it interesting that he seems to agree. So, this is from his book *Thinking Fast and Slow*. He's talking about why Bernoulli got the concept of utility wrong. 'The mystery is how a conception of the utility of outcomes that is vulnerable to such obvious counterexamples survived for so long. I can explain it only by a weakness of the scholarly mind that I have often observed in myself. I call it theory-induced blindness. Once you have accepted a theory and used it as a tool in your thinking, it is extraordinarily difficult to notice its flaws. If you come upon an observation that does not seem to fit the model, you assume that there must be a perfectly good explanation that you are somehow missing. You give the theory the benefit of the doubt, trusting the community of experts who have accepted it. Many scholars casually noted that these stories did not jibe with utility theory. But they did not pursue the idea

to the point of saying, this theory is seriously wrong because it ignores the fact that utility depends on the history of one's wealth. Not only on present wealth. As the psychologist Daniel Gilbert observed, disbelieving is hard work and system two is easily tired.'

DSW: I think that that's very interesting but can probably be generalised quite a lot. When you think that there's so many things to attend to. We can't possibly attend to them all. So that's why we need meaning systems. A theory is a type of meaning system. For all symbolic systems, 'in order to see you must be blind', is one way to put it. You can't forefront some things without pushing other things into the background. That means that nothing is obvious all by itself, only against the background of other beliefs. Everything we do makes sense against the background of some beliefs, and blinds us to possibilities. I think that that's the most general formulation. That once you see things through an evolutionary lens, then it transforms the obvious. Things become obvious that were invisible. What should be privileged about evolution? Well, because that's a true theory. Adopting the evolutionary worldview is perhaps the most important thing to do.

JW: In your book *This View of Life*, you have a great quote of Einstein's on the topic of theories. Can you remind me what that was?

DSW: Very simply the theory decides what we could observe. He was talking about electron orbits and the fact that you couldn't see the electrons, but nevertheless, you could make predictions based on their existence that you could observe.

JW: What are some other insights that evolutionary theory has for how we should structure our societies and our economies? At the beginning of the conversation we mentioned Elinor Ostrom's core design principles. Is there something you'd like to say about that?

DSW: I think that every important topic in policy can benefit from an evolutionary perspective, although in different ways. Mismatch theory for example, the idea that adaptations to past environments can become mismatched to current environments is huge. Even without talking about group selection, you can get a lot of insights from that concept. Including such things as why are many people near-sighted, why do so many of us need glasses? It turns out to be a mismatch between eye development – which evolved in the context of ancestral environments – and something about modern environments that's different, and it's causing eye development to misfire. Turns out that it's probably time spent indoors. We have the hygiene hypothesis: the idea that our immune systems are malfunctioning because our environments are too clean, as strange as that might seem.

We have the idea that child development is being subverted by modern childcare environments – kids can't play and it's important for them to play. So here is evolutionary thinking, providing a lot of insights before we get into group selection. When we do get to group selection, then this fundamental problem – that Darwin was the first to perceive – the idea that prosocial traits are not locally advantageous, therefore we need mechanisms that suppress disruptive behaviours in order for cooperation to take place. That this takes place at every rung of a multi-tier hierarchy is enormously important. It basically provides an alternative to the entire concept of laissez-faire and economics. Then at a more mundane level, every group of people who are trying to do something together is faced with this dilemma, and varies in how well they cope with it. So just understanding the basic dilemma of prosocial traits, and then building in features of our groups that are protective, can do so much. These are all things that become quite obvious from an evolutionary perspective. That makes one optimistic about the potential for a positive change. Once we know what to do.

JW: On that, one of the loveliest ideas I've learned about recently through your book *This View of Life* is Jim Coan's Social Baseline Theory. Tell us what that is?

DSW: He is a clinical neuroscientist, and was seeing a patient who was an old World War II veteran experiencing post-traumatic stress syndrome late in life and was resistant to any kind of therapy. He wouldn't do anything that Jim asked him to do. Eventually he said, I want my wife with me. Jim had never heard this request before, but said, okay. His wife came in, and at first Jim treated her as a bystander and the man was no more receptive than before. Then his wife said 'let me hold his hand.' So she did. And the old man became suddenly receptive to therapy, very receptive to therapy. Jim was amazed and he was asking the question, what was it about holding hands that changed? Something must have happened in the brain?

So he embarked upon some experiments with normal people, regular people in which he'd put in an MRI machine. He threatened them with electric shock, which was very stressful. Then he'd do that under three conditions – alone, holding the hand of a stranger and holding the hand of a friend. And he was able to duplicate the same effect – that holding

the hand of a friend had a tremendous calming effect on the brain. Then a colleague of Jim's said, 'you should be thinking of the holding hands condition as the normal condition and the alone condition as the abnormal condition.'

Jim started to think: what was the one constant in human evolution? We existed in all these different climates and ecological niches. The one constant was to be a member of a highly cooperative group. That's what our ancestors almost always experienced. That happened enough, so that basically the brain evolved under those conditions. The upshot, which is Social Baseline Theory, is that the human brain does not distinguish between individual resources and social resources when it makes trade-off decisions. It seamlessly integrates individual resources and social resources.

An experiment, not by Jim, but by his colleague, demonstrates how this works. Imagine that I take you to the base of a steep hill and I ask you to estimate its slope, which you do. I have you do this under a number of conditions, which deplete your personal resources. So, with a heavy backpack or not, having fasted or not, having had a workout or not. In each case, when we deplete your personal resources, of course, you should be less inclined to climb the hill. Strangely enough, the way you perceive that is actually to see the hill as steeper – the more depleted your personal resources are the steeper the hill appears. A fourth condition is to be estimating the slope alone or with a friend standing next to you – as soon as the friend is standing next to you, all of a sudden the slope seems less steep. So, what has the brain done? It's basically factored in a social resource, the presence of a friend, in just the same way as personal resources. The brain does not distinguish. So, against that background, the idea that the lone person is somehow the fundamental unit, which is the assumption of economics, that the individual as the self-interested unit makes all of its decisions without regard to others, seems supremely wrong-headed.

The best thing you can do for wellbeing is to be a member of a nurturing group. Earlier we said that people are more like ants and ant colonies then we might've imagined. This is a great demonstration of that. The brain expects to be in a cooperative group. And when that's not the case, the brain becomes alarmed and stressed, and so does the body. We know this from all the toxic effects of loneliness. There's a real paradigmatic change there.

JW: It's quite moving in a sense as well. Earlier, I also mentioned Jon Haidt's metaphor that we are 90 per cent chimp and 10 per cent bee, where do you put it?

DSW: Let's say 50 per cent. But these things, we don't want to just carve them up. It's like nature and nurture – they're not just additive. What it does mean is that when we want to construct large-scale societies, we need to have small groups as a cell in multi-cellular societies. We should get people functioning in small cooperative groups as much as possible. So there's a real practical prescription there. How do we do this in a practical sense? How do we bring it to scale? Most of my time now is spent working on that objective with something called prosocial. If you go to prosocial.world, you'll see how we're doing this around the world. Forming people into smaller groups in a way that we can also study scientifically.

JW: Well, we wish you all the best with your work. I can't thank you enough for being so generous with your time. We've covered so much ground. Thanks for joining me in the challenge of trying to translate a lot of these very esoteric ideas to a public audience. It's been fantastic.

DSW: Well, thank you for being so well-informed and for providing this information service.

The Jolly Swagman

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ON SHAPING HERSELF

THE ONLY FAILURE IS TO NOT TRY

MARTINA NAVRATILOVA
CONVERSATIONS WITH TYLER
2018

Interview by Tyler Cowen
Illustration by Michelle Pereira

Tyler Cowen: Martina, we are greatly honoured to have you here today. You have won Wimbledon nine times, I believe. And, more astonishing yet, there are, I believe, eighty different events where you have won both the singles and the doubles of the same event.

Martina Navratilova: Yes. Eighty-eight times. They just gave a million-dollar bonus last week in Indian Wells if a player could win both singles and doubles. They didn't do that in my day, unfortunately.

TC: If we were to take your achievements, and rather than frame them as sports achievements – which, of course, they were – think of them in terms of both education, self-education, and management, how would you describe the approach that took you, by the early eighties, to being a completely dominant player? You were a contender, and then you became completely dominant, say, by 1981. How did you do that? And what can you teach us about that process?

ML: I had a seminal moment – I was friends with Nancy Lieberman, who is a basketball player, Hall of Famer. That spring, she travelled with me, and I had a bad spring. I lost the semi-finals at the French Open. I lost the semi-finals at both the lead-up tournament and at Wimbledon.

I always said I would play until I was thirty and then see. She said, 'You know, your time's running out, and you could work a lot harder.' I'm like, 'What are you talking about?' I thought I worked pretty hard, but I didn't have a coach for six years after I defected. My dad was my coach. I thought I worked hard enough, but then she introduced me to running suicides on the basketball court.

TC: Why did she register with you in a way earlier people hadn't?

ML: Fellow athlete, very capable athlete. She just said, 'You know, you're wasting your talent. You have so much more talent than what you're putting out there.' I didn't know any better. We started training that summer.

Then I knew a guy who was also a nutritionist. He helped me tailor my diet. It wasn't to lose weight,


NAVRATILOVA
PASSPORT

but just to have better-quality food coming in. I've weighed the same since about 1977 – 147 pounds. I didn't lose any weight, but I put on some muscle and lost some body fat and, most of all, got a coach. Dr Renée Richards started coaching me. I had been doing it on my own. Other players would have a coach in their hometown. Chris Evert had her father. They did not travel, but when she goes home, she would have a coach. I would go home and I was alone.

In fact, just last week in Indian Wells, I saw a guy that I used to practise with every day when I was practising in Dallas when I did not have a coach. It just didn't occur to me get a full-time coach and with Renée, just by accident, we started practising together at the US Open.

TC: Building the team. It's sometimes been called Team Navratilova. Did you do this self-consciously?

ML: Not at all.

TC: It's just something that evolved, bit by bit? Each piece seemed to work?

ML: Totally.

TC: Then at the end, did you realise what you had done? What was the process ex-post of looking back and reconstructing?

ML: I just wanted to leave no stone unturned. The coach, obviously, was technique and tactics. The physical part was training, working very hard. I'll give you my typical day in a minute. The eating was so that I could train hard and not get injured. So, it all came together.

The typical day when I was really humming was four hours of tennis, 10.00 am till 2.00 pm, two hours of drills and maybe two hours of sets. Then I would do some running drills on the court for 15–20 minutes, sprints that if I did them now, I wouldn't be able to walk the next day. Then we would eat lunch. Then I would go either play basketball full-court, two on two for an hour and a half or little man-big man. It's two on one. Those people that play basketball – you just run, you just run.

TC: Which one were you?

ML: It switches, it's one against two. It's run, run, run. Then I would lift weights and have dinner either before lifting weights or after. So, it was a full day of training.

TC: What about 9.00–10.00 am?

ML: That was breakfast. If I didn't play basketball, we'd go on the track and run, some days, ten 100-metre sprints, or twenty 60-yard sprints. I would do four quarters. That was my least favourite. I trained hard. I worked harder than I needed to, I think, but it worked.

TC: You've done other things in life. You've been very interested in woodworking. I've read that you learned Swahili.

ML: A little bit.

TC: You have a pilot's license.

ML: I did.

TC: You wrote three detective novels, played on a hockey team. You're now having a role in raising two children. Have you used a training regime for all of those? Do you now think about getting things done this way?

ML: The positive attitude helps. With tennis, you have to be very positive and have a very short memory. Long memory for the good stuff and short memory for the bad stuff because you have to play a point. In 20 seconds, you've got to get ready for the next point. You've got to analyse what happened and try to do it better. But raising two kids is challenging. I'm going to say whatever training I've done is not enough.

TC: Billie Jean King once suggested that you use writing in a journal every day to help you accomplish your goals. How does that work for you? What is it you do? Why do you think it works?

ML: It worked because it really centres you. It narrows it down whatever long-term goal you have. It becomes more real and more current because it narrows it down, 'What do you need to do today?' and 'Did you accomplish that goal?' You have a big goal. You break it into smaller goals until you get into, 'Okay, what do I do today to get to that goal?'

You keep track. It's easier to keep track. It's always good to keep track, whether you're playing points – keeping track that way – or just measuring your progress, or maybe regression some days. I would rate myself on a physical level, emotional and mental – how I did today on a scale of 1 to 10. Some days were 10s, some days were 7s, some days were 3s. Try to be honest with yourself. Honest but also nice. You see that with most champions – they're perfectionists. You beat yourself up too much. I preach and I try to strive for excellence rather than perfection. If you strive for excellence, perfection

may happen. It's good enough to be excellent. You don't need to be perfect because perfection just happens by accident.

TC: John McEnroe once reported that Björn Borg said that to him, I quote, 'Number one is the only thing that matters.' That doesn't seem to quite be your attitude. How do you think of your motivation in terms of the goal?

ML: I wanted to be number one. I said that when I was 20 years old. I said since I was eight or nine years old, I wanted to win Wimbledon. At that point, you don't know how big the world is and what that all means, but that was the goal. I just put it all out on the line. What was the question? I forgot where I was going…

TC: Björn Borg saying, 'Number one is the only thing that matters.' He may have been exaggerating himself. Do you ever feel you have that attitude, that anything short of number one is a failure?

ML: Not at all. The only failure is to not try. For me, it was always giving my best, whatever it was that I was doing. Even if it was riding the bicycle in my garden and trying to go as fast as I could and timing myself. My first watch was a stopwatch when I was in third grade. I was always timing myself. I would try to go faster. I would back up, do a little turn, so I could make the turn faster. Competing with myself, my competition was always with myself. I always said I would rather play well and lose than play lousy and win because if I played lousy and won, that just meant my opponent was really lousy.

I'd rather be pushed. That's why I really enjoyed the competition against the best players because that's when you have to put it on the line and play your best. Anything less won't be good enough.

The number one kind of happened. That's another line that I use. Everybody has that goal. Most players that play on the tour, they want to be number one. They want to win a major, but only one person can be number one. Does that make everybody else a failure? No. They're trying their hardest.

If you try your best and the best that you can do – we have the ranking, obviously it doesn't lie – this is exactly where you stand. You could be forty-five in the world or five in the world. If you tried your best and your best ranking ever was number ten, then the other nine players were better. But if the other nine people weren't alive, you'd be number one. You're still the same tennis player, right? You're not any better. So, for me, the competition was always with myself.

TC: Pam Shriver once said that she thought her doubles partnership with you worked so well precisely because the two of you had this creative interchange, but you didn't spend much time together off the court. You saved that back-and-forth for when you were playing together. Does that make sense to you?

ML: We talked a lot, yes. We had to catch up on everything while we were playing the matches. Nowadays, they all talk strategy. We'd do like, 'Okay, I serve wide, but what do you want to do for dinner?' or 'Where did you go last night?' and 'Where is your coach sitting?' We were visiting. 'Can you believe that guy over there? You know, he's not even watching us.' We were just talking smack, and we had fun.

TC: A few questions about women's tennis in particular. If you think about Steffi Graf, Sabatini, Monica Seles, Hingis, yourself – do women in tennis develop more quickly in terms of age? If so, why is that the case?

ML: Physically, yeah, women mature earlier – emotionally and physically, but most of all physically. Nowadays, the game has gotten so much more physical it's a little trickier for people to play really great tennis at age 14 or 15.

In the women's game, we instituted an age eligibility rule, so you cannot play as many tournaments as you want until you're 18. There is a limit to how many tournaments you can play at 14, at 15, etc.

The biggest reason for that was we had too many injuries and too many people getting burned out because the parents had these big eyes for their kids. They're pulling kids out of school too soon, and doing training and burning out physically or emotionally before they even get on the tour. Or, if they get on the tour, then the injuries come. We had too many people pulling out. I think some of it is also they don't make them like they used to.

ML: In the old days, seriously, I would come to a tournament and somebody would default. I'm like, 'Oh, my God. Is she okay? Is she in the hospital?' It was unusual for people to pull out. I think Chris pulled out of three events, ever. Same with me, three tournaments that I pulled out of.

TC: And you played a lot.

ML: I played a lot of tournaments and a lot of matches. I don't know how many singles I won, but I think I played something like 1,700 singles matches and, I don't know, 1,100 doubles matches.

TC: What accounts for that change? Why are we moderns weaker, more complacent? However you might describe it, what's happened to us?

ML: Things are easier, there is no doubt. But also, they're lasting longer because things are easier. You have trainers now. When I came on the tour, I pulled a stomach muscle the very first tournament I played. It took two months before I got well again.

We got a trainer for the first time on the tour, in 1975. I thought, 'Oh, you get a massage.' No, no, this is a trainer. They actually tape your ankles and stuff. We were really clueless. We didn't know. Nowadays, the care is much better, and the players last longer because of that.

We played on clay or grass, indoors on soft carpet, with wooden rackets with animal gut for the strings. Now, they play on hard courts most of the time, with metal rackets with nylon strings. So, the body does not absorb that vibration from the racket. They use their wrists a lot more, so you have a lot more injuries on the upper body.

Playing on hard courts, you see them slide. I'm like, 'I still don't know how they do that.' Sliding on hard courts, it's like, 'Ohhh.' There'll be a lot more hip replacements in the future because of that. I think the game is more physical, so they get more beat up. Everybody's hitting the ball harder because of the rackets.

TC: Some sports, it seems fairly easy to compare the past and the present. The 100-metre dash, how long did it take? There's a very definite timing. If you're thinking about tennis players, the best of today, the best of an earlier age – Althea Gibson or Evonne Goolagong, whoever it is you have in mind – do you think it's even a meaningful comparison?

Or do you have some definite view, like, 'We were better than they'll ever be.' Or 'They would take every set from us.' How do you think about that problem?

ML: Me from 1990 would have beaten me from 1980, would have beaten me from 1973. You get better as you play. I would have beaten Althea Gibson. But if I had been born in Althea's Gibson's time and Althea Gibson was born 20 years later, she would be beating me because it's the evolution of the sport.

Nowadays, especially with the rackets being so different, you can't really compare. But if Evonne Goolagong was born now, she would still be winning majors. The same with the guys, you're a product of your culture and of your time.

If Usain Bolt was born in 1930, I'm pretty sure he would not be running 9.2, whatever he's running, 100 metres. It just wasn't going to happen with those shoes on those tracks. It's a different ballgame.

TC: If you think about how men and women are divided in tennis, the current arrangement has a lot of advantages. It could be the case – I'm no expert in this area – that there are more than two genders. In track and field, you have Caster Semenya, where people argue, 'Should she be allowed to compete in women's track and field?'

There's a lot of measurement that goes on. Arguably, it's somewhat intrusive…

ML: You think?

TC: … or just distasteful. How should we think about this problem and structure the rules going forward to have the best available arrangement?

ML: You just try to take it case by case and make it as fair as possible for everybody involved. I'm not a doctor, so it's hard to pin that one. You just try to make it fair. There is not any particular rule. If you go by that, then some guy may have a lot more testosterone than another guy. Is he banned because he has too much?

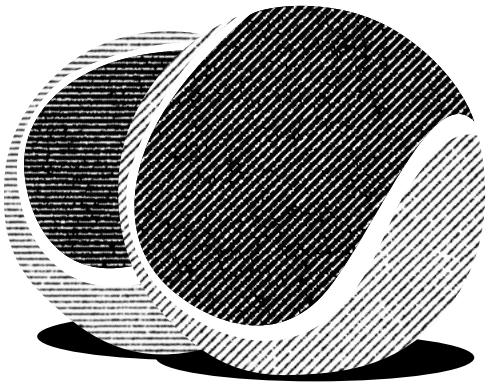
Where do you put the limits? Who decides where the limits are? You just take it case by case and try to make it a level playing field. With me, they were saying I had an advantage because I'm gay. Somehow, a gay player hits the ball better than a straight player. I don't know.

TC: Issues of pay equity. As you know, Australian, US, French opens, Wimbledon, Indian Wells, Miami – male and female prizes are the same at the top. But many other tournaments, male winners tend to receive quite a bit more than female winners. Is this, in your view, fair? Should it be changed? If so, how should we change it?

ML: We are changing it a little bit at a time. Whether it's a bank or whatever the sponsor is, men have a much easier time getting the sponsorship money and don't have to prove it. The women have to prove themselves, which is why most of the sponsors that have been involved in women's tennis have stayed around a lot longer because we have to make sure that the money is judged correctly, that economically it makes sense.

How many false starts were there for the NFL, NBA, all of that? You have one false start in the women's league, and it's, 'Oh, the women can't make it.' But the guys, they keep throwing money at them.

It is still in different cultures. We still have tournaments in places where women can't walk without a male escort. Times have changed, but not enough. It's certainly going in the right direction, but the pay inequity is still there.



> It is a sexy sport, but I don't think it's because of the way we dress. It's just because we're really capable of hitting the tennis ball and doing things on the court that most people can't.

TC: Male and female tennis announcers, should they be paid the same?

ML: I'm trending on Twitter today. My, 'Yes!' claim to fame. You try to pay people an equal amount for equal work, equal contribution, and equal level of expertise, and whatever championship quality you want to assign to that.

There's this hoo-ha right now about me getting a lot less pay for the same work as John McEnroe at Wimbledon. The BBC is a publicly owned corporation, but they would not divulge what people are making.

Finally, they had to last year say how much people are making. Only people that are making £150,000 a year or more, anybody less than that, you don't have to divulge.

A lot of the part-time people did not make the cut, but John McEnroe did make the cut. He gets at least £150,000 for Wimbledon, while I was getting paid about £12,000, £13,000 for less work – less work, yes – but about maybe one-third.

It's because I couldn't get any more. I wanted to work more, but we were getting all kinds of excuses why I couldn't get more, or other women weren't getting paid as much as the men. I knew I was getting paid less, but I didn't know how much less. Then when I found out, when this report was made public, it was like okay, now this is not just percentage. This is a multiplier. There was a program that just went out tonight actually. It's kind of the *60 Minutes* in the UK, called *Panorama*. I did an interview there, so now there's a big to-do about it. It's not between me and McEnroe. It's not about that. It's about women getting paid a lot less than men for a similar job.

TC: Here's something Billie Jean King once said. I'm not sure, but I think she was referring to both men's and women's tennis. Quote: 'I think tennis is a sexy sport, and that is good. The players are young, with excellent bodies, clothed in relatively little. It offers the healthiest, most appealing presentation of sex I can imagine, and we in sport must acknowledge that and use it to our advantage.' True or false?

ML: She said that?

TC: It's in print.

ML: It doesn't sound like Billie. I'd never heard her say that. It is a sexy sport, but I don't think it's because of the way we dress. It's just because we're really capable of hitting the tennis ball and doing things on the court that most people can't.

TC: And it's a cognitive endeavour, most of all.

ML: It also makes sense to play tennis in shorts or shorter skirts rather than what Suzanne Lenglen used to have to put up with, with long dresses, etc. I think that form follows function on the tennis court anyway. There's nothing wrong with being sexy as long as it's not sexist.

Guys get paid more if they're good-looking. They get more endorsements. Women, same thing, but then it becomes too disparate. That's when it becomes a problem, when you have to be sexy in order to be paid the same.

TC: Here's a question from a reader, and I quote, 'In her autobiography, Martina observed that US women, such as Chris Evert, had to conform to far more rigid gender stereotypes than Czech women like she did. Does Martina still believe that US gender stereotypes are a lot more constricting and universally imposed in America today than in, say, Central Europe?'

ML: That's a good question, but I said that a long time ago. That biography came out 30 years ago. I really don't remember what I said. Once in a while I sign it, and I look inside. I'm like, 'Oh my God. I can't believe I said that. This is way too personal.'

The one thing growing up in a Communist country, perhaps the only good thing about it, was that it was okay to be a female athlete, or anything, really. There were women doctors, professors, very common. Not in the political scene – there were always guys, for some reason. But every other field, women were just as encouraged to go into that field as men.

There was no 'Oh, you want to be an electrician? You have to be a man.' No, or a professor, whatever. It all worked. When somebody said doctor, you didn't assume it was a man. Whereas it was an assumption here, I still make that mistake myself.

Being an athlete, I was encouraged to be an athlete, and to do to the best. It wasn't like I had to be begging to be able to play tennis because it's only for boys.

Same with the clothing – maybe we weren't dressing so sexy because there just wasn't anything sexy to be bought there. You just went to the store and bought what was available.

I think Chris was just conforming, not because of any preconceived ideas, but she came from a good Catholic family, and she wanted to please her parents. So, it was more that than, I think, any American culture. It was actually more cultural within the family how you grew up.

TC: At the top level, why has US men's tennis collapsed?

ML: I don't think it's collapsed. I think we have 10…

TC: But the last Grand Slam winner, who is it? Is it Andy Roddick? I don't remember … a long time ago now.

ML: I think it's Andy. We've had a few in the finals, but right now, those new guys coming up – Reilly Opelka, who is like 6 foot 10, he is huge, and a huge serve, and a good, big talent. Taylor Fritz had a good tournament last week in Indian Wells. I actually used to play against his mother, Kathy May. Jack Sock, he made the Masters. On a given day, they can beat anybody, but to win a major, that takes a lot. It always goes in ebbs and flows and fluctuations. The biggest thing is that the rest of the world caught up. It's not that we're bad, it's that the rest of the world is better. It's a lot more international. Tennis is a lot more global. The tennis ball doesn't know where you're from, does it?

TC: The NBA, the NFL, and Major League Baseball, they've all been revolutionised by analytics and statistics, but tennis so far, not that much as far as I can tell. You may know better. Is this coming to tennis? And if so, what kind of effect is it likely to have?

ML: It's there now. The knowledge is there. People are figuring out how to use it to their advantage. They have all kinds of statistics now. With the Hawk-Eye, when you play matches, they even have cameras on practice courts. You can measure how many revolutions per shot, where it landed, how many mistakes you made.

It can get too much, but you can certainly use it to your advantage to see where the weaknesses are. It's very obvious where the strengths are with the opponents, etc. It would help in making game plans and all that. You can analyse all you want, but ultimately, you've just got to hit the damn ball and hit it well.

TC: Are the rules of tennis flawed in some way? Are games too long or competitions too long or too short? Is there too much or too little regulation of string and racket technology? Would you change the scoring system? Can you improve on what we have?

ML: That's a lot of questions. One question at a time, please. Regulations, absolutely, the rackets have taken over the sport, and the strings. The strings, when you put them on a microscope, they have these little teeth. They bite the balls so you can put a lot more spin on the ball, which makes it a lot easier to hit it.

The rackets, the sweet spot used to be about this big [small circle in the middle]. Now it's this big [the entire face]. As long as you don't hit the frame,

you're good to go, so it's very forgiving. Everybody hits a much better ball, and it's more difficult to come to the net because it's easier to dip the ball with the spin, etc.

The racket manufacturers have really changed the sport too much in my mind. You don't see as much variety because of the equipment really favouring the baselines, the ground strokes over volleys.

TC: Top players today, they don't have to be as smart as in your time?

ML: I don't know. I haven't measured their IQ.

TC: It sounds like more strength-oriented and less cognitive.

ML: Yes, it is. It can be. You can get by with lower tennis IQ. If you can power past people, you don't have to hit around them, you go through them. The rackets are more forgiving. It's like having much more horsepower. You just step on the gas, and off you go.

Technique is not as prevalent, and tactics, although now you find different parts of the court because of the strings, also because of the rackets, which makes it different. It's just different. It's not necessarily better or worse, but less variety, and that's what I'm missing.

TC: Mixed doubles also seems less popular, right? Is that another example of declining interest in IQ?

ML: There is so much more money in singles and so much interest in singles. Fewer players play singles and doubles. Also, because you win one major and your life is made. So you don't concentrate so much on doubles. You don't want to make anything hamper that possibility, so people play less.

I played singles, doubles and mixed a whole bunch of times. In fact, I probably played too much in my thirties. I should have played less, but I didn't know any better and I liked playing mixed. Maybe that's one of my other big accomplishments. I won the triple at the US Open when I was 31. I won singles, doubles and mixed.

One year at Wimbledon, in '86, it rained so much that I only played two matches in the first week because it rained. Two singles, and then I played seventeen matches the second week because I got to the finals of all three. I played two or three matches every single day.

Then the last one, we lost the doubles. Pam and I lost the doubles. We hadn't lost a match in two years. We lost the final. I won the singles. Then Sunday, after winning the singles and losing the doubles final, I played three. We were in the quarter-finals on the mixed doubles on Sunday. I was on the court for six hours because there was no tie break in the third set.

I won the first match in three sets. Then we played again semi-finals in three sets. I think it was 23–21 in the third. Then the final was three sets as well. So yeah, I was tired that day.

ML: That's why people don't play – because it takes too much energy. The game is more physical, and they don't want to hamper anything. But I like playing tennis so much that I couldn't see not playing doubles.

TC: If somehow tennis didn't exist or you couldn't have been a tennis player, but ended up in this country at a young enough age, what do you think would have been your career?

Anything else but tennis. It can be hockey. It can be woodworking.

ML: I play hockey. Woodworking? No, I don't think that would have made that much money. I did woodworking. I still have ten fingers. I did pretty well, made a couple of tables. I wanted to be an architect or a builder. I think that's why I got into woodworking. I wanted to create. If it was a sport, either a skier or a race-car driver. I like speed.

TC: If you look back on your whole career, your whole life, what question do you most frequently ask yourself that you would be willing to share with us?

ML: I've been married now for 3 years, been with Julia almost 10 years. Her two daughters are 16 and 12. The question I ask myself most often these days is what can I say to them so that they will actually put the dishes in the dishwasher rather than just leave them in the sink?

I have not solved that riddle. I don't know. Take away the iPhone? No, that doesn't work. Driving privileges? No, I don't know. I've run out. Being nice? Give money? I did that too. I paid them. That didn't work, either. Anybody, any suggestions? The dishwasher's here and the sink is here. It's not like it's a long trip, you know? I come from a home where we didn't have hot water till I was about 12 years old. We had to heat up the water to wash the dishes, to heat up the big thing to take a bath once a week. Took sponge baths. That's all you had. My mum washed the dishes, and I dried them every night. Anyway, what can I do?

TC: Some questions about gay rights. How can we incentivise other celebrities, athletes to come out of the closet more? Because there's been a huge positive external benefit from what you've done.

Many, many people's lives are much better off and freer and have more dignity. It seems highly likely there are many more gay people in sports who are unwilling to come out of the closet even now.

ML: Didn't you see the Olympics? Adam Rippon?

TC: The Olympics, but major league sports, it's quite rare.

ML: It depends on what sport you're in. It's almost like if you're a figure skater, you have to prove that you're straight if you're a man. If you're a softball player as a woman, you have to prove that you're straight. It depends on the sport. But it's difficult in team sports because if the coach is in any way homophobic, you don't get to play. You don't get to compete.

There was … I forget her name now. She played for Penn State, coach. Anybody can help me? She was a coach there. Rene Portland. She openly said, 'I will not allow a lesbian on my team.' This was back in the eighties, and proudly proclaimed to her parents that there are no lesbians on the team when she was recruiting her players.

So, do you come out? You don't get to play. It's difficult in team sports or professional sports, same thing. You would get blackballed by the league if you did the unpopular thing. It's okay now. It's better.

TC: Say you're starting in the NBA. You're a good player. You have a proven record. Very few people in that position have come out. Do you think it's about endorsements or commercial factors or fandom? Because they're not going to bench you the minute after you say…

ML: It's privacy. It's your teammates. Some may know. Some may not. I know professional team sports, there's definitely a lot of players out there that their teammates know. But it's still a taboo, and it's uncomfortable. It attracts attention in a way that these macho sports don't want.

Even on the tennis tour, I was lucky that I could come out because I knew I could still play tennis no matter what happened. Endorsements, I didn't care. I lost a lot of money, but I just wanted to play tennis and be true to myself. I knew I could still play no matter what. But on team sports, it's tricky. I get that, that it's difficult, especially for men. On the men's tour, the guys are so far in the closet I don't even know who they are.

It's disappointing because the women are much braver on that front. I don't know why actually.

TC: You were born in Czechoslovakia, what's now the Czech Republic. Do you follow Czech politics still at all?

ML: Yes, unfortunately.

TC: Why do you think something seems to have gone wrong? Do you think it's something about the Communist heritage of what is now Czech Republic that prevents it from being this perfect fit into the European Union? What's your diagnosis?

ML: It's a great country to live in, but the politics have gone slightly downhill. I think people have a short memory. There are too many people still pining for the good old Communist days, as if there was anything good about it. A former Communist, Zeman, was re-elected president again, or prime minister – whatever he is now. It's frustrating.

It's still a great place to be and a democratic country. I think overall it's done really well. But it's frustrating to me to see the right-wing politics winning so much these days, and authoritarians winning the elections.

TC: What did you think about the split with Slovakia when that came?

ML: I think they would rather take it back if they could. But it was peaceful. It was done nicely. Nobody died. There was no violence at all. It was just people voted for it. That was that. It's a shame, but that's what happened.

TC: Say Czech writers, Milan Kundera or Hašek, do you still read them, identify with them, follow them? Or are you just fully in an American life but with a Czech background?

ML: I'm both. I feel very much at home here. I'm a total American, but I still feel at home when I go to Czech Republic. My sister lives there, and it's where I grew up. The town is the same. There are still no traffic lights there. It hasn't changed. I feel very much at home both places. I must say if Czechs play Americans in hockey, I root for the Czechs.

Ashamed to say that, maybe still also rooting for the underdog, the smaller country. We're a country of I think 10, 12 million people.

TC: There's Ivan Lendl, Martina Hingis's mother, yourself – all from the Czech Republic. Why so much tennis talent from your country?

ML: That was about the only sport we could play there. For me, it was the availability of playing because we had a club in my hometown. It was the opportunity. I had good coaching. It was a sport

that I loved. Ivan Lendl was from a tennis family. Martina, tennis family. It was passed generation to generation.

Also, the club scene is very healthy. Czechs are pretty athletic anyway, and active. But most of all, the clubs are set up where you walk to the club in your hometown. It's very safe, so you walk. You can stay there all day on the weekend. Or after school, you go straight to tennis and play. Then you come home before dark. It's just a nice scene. And it's cheap, so you don't have to be wealthy to make it.

You have good coaching and people to play with. I played against all the people. Whatever my level was, I played against those people. It wasn't I only played against girls my age. I played whoever I could compete against. That breeds, I think, good players.

TC: In your memoir, you wrote the following, and I quote: 'Charlottesville reminded me of my part of Czechoslovakia.' Please explain.

ML: You mean last summer Charlottesville?

TC: No, living in Charlottesville.

ML: Oh, living in Charlottesville. Well, it's Blue Ridge Mountains. It's the same climate and same countryside, very similar to where I grew up and very comfortable.

TC: Emotionally, what was it like to regain your Czech citizenship?

ML: I waited for that. I don't know why I waited. You had to get so much paperwork done. I finally get it organised, and I send it. I don't get anything back. I finally called. They didn't get the paperwork. I'm like, 'Oh, I have to start over again.'

Two years later, I finally got to it. It happened that I got it after Obama became president, not under George W. Bush. People are saying I did it on purpose because I didn't want to be an American anymore because of George W. Bush. It had nothing to do with it. I just wasn't organised enough to get all the paperwork done.

So I have two passports. It's nice to feel like you belong to both countries. Because when I defected, the reason I defected was you couldn't get a visa unless the government allowed you to get a visa. They wouldn't let me play the US Open, so I defected. Then, for six years, I was stateless. I had a thing that said 're-entry permit'. It looked like a passport, but I had to get a visa every single place I went. When you're filling out the paperwork, it says country of citizenship. I had to put stateless. Finally, in '81, I got my citizenship, USA, and I got my passport. The next day, I'm flying to Europe. They said, 'Do you have

... what astonished me the most was that there were oranges [...] Growing up, we had oranges once a year for maybe two weeks. For Christmas, you had oranges. It was the most precious thing you could eat. It was more expensive than beef, and here you could just pick them off the trees.

a passport?' I'm like, 'Do I have a passport?' I still remember that moment. I was so proud. Now I have two passports. It's very cool.

TC: What was your biggest shock when you came here as a defector?

ML: I came here in '73. Then I defected in '75. When I first came here in '73?

TC: Yes.

ML: I'd seen American cars before in Germany but still the size of American cars. They're still astonished when you see an old Cadillac El Dorado. It's like four feet longer than a SUV, just huge.

But what astonished me the most was that there were oranges. The first tournament I played was in Fort Lauderdale. There were oranges on the trees. You could just pick them off the tree. Growing up, we had oranges once a year for maybe two weeks. For Christmas, you had oranges. It was the most precious thing you could eat. It was more expensive than beef, and here you could just pick them off the trees. I picked up a coconut. Took me about three hours to get inside it, but I ate the inside of a coconut.

The size of ham on a sandwich, because growing up, again, pork was very expensive. You had bread and maybe one slice of ham. I would eat around it, so I've got a big chunk of ham on the last bite.

Here you get a ham sandwich. It's two pieces of bread and this much ham. It's like, oh my God, this is amazing – $2.50 for a ham sandwich, still remember it. For me, that was astonishing – grocery stores, astonishing.

TC: What bugged you the most the early years?

ML: Probably not being able to talk to my family.

TC: About this country. Obviously, you missed friends, family, but about America.

ML: Then nothing. Things were great. Politics seemed to be very reasonable. People were nice and welcoming. When I defected, I was welcomed with open arms in Texas. I had everything. So back then, nothing.

TC: What was it like to go skiing with Donald Trump?

ML: His wife was a lot faster skier than he was. I knew Ivanka before she even met Donald Trump because she's Czech. She was a friend of a good Czech friend of mine. I met her in New York back in the seventies. I skied with them a couple of times in Aspen, with the family.

TC: Played tennis with them ever?

ML: No. Have you seen – there is a classic photo of him hitting a forehand volley. Oh, it's a thing of beauty. It's like, 'Really? You wear those shorts? Okay.'

TC: In some ways, you've been critical of the Trump presidency.

ML: Some ways?

TC: Some ways. If you think about structurally, how did America get into its current problems? What's your explanation?

ML: Facebook, Cambridge Analytica, bots. It was a perfect storm, or a horrible storm for Clinton. There's no doubt about that. Everything that could have gone wrong went wrong, but still you thought somehow…

We knew about the Electoral College. I think that system needs to be looked at. It's not working. If I lived in Hawaii, I would be really pissed because my vote doesn't count because by then, the election's decided. It should really be one person, one vote, regardless of where you live. I don't know why geography makes a difference.

I'm for state rights up to a point because if you do something here, you're okay. If you do the same thing there, you're a criminal. I just don't get that. How can it be so disparate, so different from state to state? Particularly now with legal marijuana, etc., or crossing state lines with liquor in your car, it just doesn't make sense.

Anyway, I'm not an authoritarian at all, obviously, but I think the federal government needs to be more responsible for what's going on in our country. There are too many things that are unfair in this country. It could be so much better.

How did it all happen? I think you see the statistics. You get frustrated because it doesn't make any sense for so many women still to be voting that way. People just don't pay enough attention to facts.

TC: If I talk to a lot of Eastern European or Communist èmigrès – Garry Kasparov, Masha Gessen – I get the sense that they view what's happening in America now through the lens of their history…

ML: Fifty years later.

TC: … and a history of fascism and authoritarianism.

I was born in the US. When I look at what's happening now, I tend to view it more as recreating a version of late nineteenth-century politics, where

things are very partisan and wild, and leaders make different kinds of irresponsible decisions or have strange rhetoric by, say, the standards of the eighties or the nineties.

How convinced are you that that kind of Eastern European authoritarian lens is the right way to think about what's happening in America today?

ML: Because that's how Trump got elected. It is very similar to that. I don't understand this fear. We're supposed to be the land of the brave. Free, yes? Brave? But fear is what drives people to make these decisions.

I had therapy a long time ago. The therapist said, 'You don't ever make decisions based on fear because you make wrong decisions.' But that's how people are voting, based on fear so much.

I don't know what we're afraid of because nothing bad has really happened in this country since the Civil War. You really think about it. Pearl Harbor? Yes, horrible, awful, but compare that to what went on in China, Communist countries, of course all the wars in Europe, the First and Second World Wars, Korean War. Compare it to that and there's no comparison.

We have not really been touched, yet we're so scared here. Of what? I don't understand that. It's like this manufactured fear. Then people are just blind. They make these decisions on emotions rather than rational thinking.

TC: What's your ideal trip to Africa? Describe that for us and why it appeals to you.

ML: Oh gosh. I spent a lot of time in Kenya and I've also been to Tanzania, the Ngorongoro Crater. I have travelled all around Kenya. Just anywhere, just drive. Just take a car and drive. That's actually why I learned to fly. Maybe not drive. It's safer to fly in Kenya than to drive. The roads are pretty bad.

It's magic. Anybody that wants to go to Africa, do it. Don't think about it. It's amazing. The people are fantastic, and the animals. It's just magic.

TC: Two final questions. What can you share with us about what you're planning on doing next with your energy, your organisational, managerial and educational abilities, plus your athleticism?

ML: Maybe get a GED. I'm helping my kids with their homework. I think I could pass, but I don't know. Seriously, I do a lot of speaking. I do speeches around the world on women's issues, LGBT. Still being an activist, I'm going to march on Saturday in Miami. I can't come to Washington, but I'll be marching in Miami. Actually, we live about 10 minutes from Parkland so it really hit home as my daughter, her friends, were wondering whether their friends were impacted – of course, everybody was impacted – but if people got hurt.

I think just keep being an activist, keep speaking out for the right things. I've always been a proponent for the little guy, always defending the little kid against the bullies. I'll keep doing that because that's just who I am. I can't help it.

TC: Final question, to what extent you are still optimistic about the US…

ML: Absolutely.

TC: … what is it that most makes you optimistic?

ML: Our institutions. I think the people are waking up. I think we slid into complacency and being comfortable, almost lazy, as nothing bad is going to happen. Little by little, that frog is going to get boiled in that water. I think a lot of people are starting to jump out of the water now. I think people are waking up and getting involved.

Most of all, the young ones. Again, maybe Parkland might be the tipping point for a horrible reason, but in a good way now that the young kids are realising that we don't want the old people to decide what our lives will look like 20 years from now, or 30 years from now, or what they look like now, actually. I think I'm optimistic because of the young ones.

TC: Martina, thank you very much.

Conversations with Tyler

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