SCIENCE OF THE NOOSPHERE

Tyson Yunkaporta and Megan Kelleher

with

David Sloan Wilson

David Sloan Wilson: Okay. Well, thank you, Tyson and Megan for this wonderful conversation we're about to have. Thank you. Welcome. So I want to begin by the email introducing myself to Tyson, knowing that he's much in demand on the speaking circuit. And so I titled my email, "Not your usual interview request." And I said that I'm an evolutionary biologist by training... And the reply I got was, "You had me at evolutionary biologist. Been wanting to talk to one of your kind for ages. And the Weinsteins are too anti-woke to be into my work." And so there's the beginning of our conversation. I'm going to want to know, Tyson, why it is that you've been wanting to talk to one of my kind for ages, and why I've been wanting to talk to one of your kind for ages. And Megan, we need to bring you into this conversation.

So the topic is, indigenous society in relation to modern life, and also in relation to evolution. The grand evolutionary story. Beginning at a time when all of human societies were indigenous societies, by which we mean, living very close to the earth, and typically at a very small scale compared to modern societies, for sure. And that makes indigenous societies extraordinarily interesting to evolutionary biologists, as a the best estimate we have as to human origins, and what made us so different from other species. And so this is what I do. And I have colleagues. And we think we know, but I've actually never talked with someone who identifies as an indigenous person. And so that's why I'm so interested to have this conversation.

And maybe Tyson, you could just tell me why you've been waiting to talk to someone of my kind. And to kick us off. And then we'll bring Megan in, and we'll get going in earnest.

Tyson Yunkaporta: Well, I guess your kind is all like you. Like in the autumn of your life and discipline, looking to talk to somebody from the I guess, you'd think paleolithic communities that formed so much of the foundations of a lot of your theories. A lot of those “when we were cavemen” assumptions and ideas and so much of which has come more out of pseudoscience than science. So you are in an extremely rigorous discipline that has way back in its origins, just some bits and pieces of wrong story that I feel like I can help you out with. Patch those ones up. There's no reason for that entire thing to fall, just based on a couple of wrong stories at the base of it.

Yeah. Anyway. Yeah. I feel like there's a bit of a holy grail in your discipline of looking for, what's that secret force multiplier in between a dog thing turning into a whale thing. There's something that we're missing there. I don't know. We're not quite sure what it is either, but maybe we can find it together. Yeah. So I guess being a complete, what you call in the States, a mutt myself, culturally and biologically and all of the rest. And being an indigenous person of Australia, and deeply embedded in the cultures of our peoples all over the continent. And speaking from that liminal space as I am, I feel like I can mediate in between those spaces a little bit in playful and fun ways, that might spark some interesting thoughts.

DSW: Which your book, Sand Talk, does a great job doing, for our audience — Sand Talk: How Indigenous Thinking Can Save the World. And one of the things I like about this book, is that you don't set yourself up as some pure vessel of indigenous knowledge. You announce yourself as a mutt, as you just put it. And I want to bring Megan in. And tell us a little bit about, check in as human beings, please. Megan, how you enter this picture. How you guys got together. You're husband and wife, the audience might not know that. And your path basically, to this place where we're talking about indigenous society in relation to the past, present and future.

Megan Kelleher: Okay. So there's a few things that I need to hold in my head without taking up the entire two hours of our interview. Yeah, there's a bit of a story there. So I just want to introduce myself then. I guess first introducing myself as a human, but if we're going to carve up my identity into these labels and terms that people find helpful to understand what informs our behaviors. I belong to the Baradha and the Gabalbara peoples of central Queensland. So they are my mom's maternal clan groups. There's some stolen generation, some lost history also on my mom's side.

So I'm not completely informed about the entire picture of her dad's lineage, but that journey is unfolding, which is exciting. And then on my dad's side, he's a third generation Irish-Australian settler. And so my identity is also one of cultural hybridity, and I'm still I guess on this journey of finding out what that means. And certainly through my work as a PhD candidate, I'm using a methodology of indigenous standpoint within that work. So that's really put me in this situation where I'm having to think theoretically in some way about who I am and what my experience is and what I can speak from. So I would not claim to be an authority on indigenous culture or traditional practices, I'm in a position where I can still learn.

I've got a lot to learn about my particular clan groups, cultural practices. And there's a lot that we have to restore because of the legacy of colonization. There are things that are needing to be relearned and reawakened, that are still there. But I'm also deeply involved in this project of modernity. Here I am speaking via this technology platform, which I'm not completely uncomfortable with. I'm doing a research project that's looking at the affordances of a particular blockchain technology and how that impacts indigenous governance. So I'm in an interesting time in history I feel, and it's a bit of a, it's always a privilege, isn't it?

How we can as agents affect positive change in our world. Or positive is a bit of a subjective term anyway. But to answer your question about how did Tyson and I meet. So when I was doing my undergrad, I had an opportunity to go on a cultural study tour to some of the big Ivy league universities in America and in England. And as part of that organization, which Tyson was involved with at the time. He was running an academic enrichment program that was doing a pilot in Western New South Wales. And I was invited to be a mentor on one of those... on a camp as part of that pilot project. So I was invited by Tyson.

And so there we are out in the middle of Western New South Wales and Tyson started talking about... I can see him in my head. I just can't quite remember what it was that he was talking about. Except all I was thinking was, "This guy is a complete nut. All I've got to do is just get through this camp, go home and get on with the rest of my life." And then there were things that happened throughout the course of that week, that were just completely transformative for me. There were really deep awakenings for me about getting my life back, getting back I suppose into relation with Aboriginal community and realigning my purpose with that work that is deeply important to me, I guess solving problems that have come about because of the colonial project essentially, that is still playing out. And then understanding myself within that colonial project, and thinking about what I can do.

TY: Long story short, I brainwashed her and now she's in my coat.

MK: Yeah.

DSW: Yeah. That's the male version. That's the male version.

TY: That's not true by the way. That was a joke, people, don't take that seriously.

DSW: The record has now been set straight. Okay. Let's dive in. Oh actually, Tyson, you need to have your turn as to how you found yourself to be a spokesperson, an interpreter of, or you might even say a midwife of indigenous knowledge in relation to the modern condition.

TY: That's a co-evolution thing with Megs and I. I mean, I was just operating at very much the local level. That's how I've been doing it for decades, just going around with different local groups and working deeply with indigenous groups and communities all over Australia, helping to develop various different things and doing lots of different ceremony and all kinds of stuff.

DSW: But you grew up with one foot in the modern world and one foot in the indigenous world. Right? So from the very beginning.

TY: I don't know how modern it was. So I grew up more on Australia's frontier from about 1972, through to the end of the 80s. I grew up in remote locations, usually in places where there was some frontier extractive activity going on. Like dams being built or mines being dug or things like this. So grew up on those fringe camps of those places, just moving around a lot. So I saw a lot of different places in Australia over that time. And grew up in the bush as it was dying in these various zones that were being destroyed. So I got to understand the land, but then also watch that land be deconstructed, and so understand it that way as well. There's nothing helps you understand something better than seeing it being pulled apart bit by bit. I guess I grew up that way.

DSW: You have a beautiful passage in Sand Talk in which you talk about waves of extraction. And as I recall, you're teaching a group or something like that. And there they are. The extraction has taken place in the past, and those have come and gone basically. And then there's the current wave of extraction that everyone's trying to adapt to, that they're going to be this or that, but that's going to pass too. And so you had this long view, which you say is part of indigenous thinking to be more systemic than Western thinking. Actually, I wasn't intending to get to this as the first thing, but we might as well.

TY: Well, I should finish the question first. Sorry. I was right in the middle of that thing. So I started out, I was working very intensely locally. So how did I become somebody who's speaking beyond that in a broader sphere of influence around the place. That's basically because of Megan. So it basically is a sexual selection thing. That selective pressure. So I moved from three and a half thousand kilometers north, down to Melbourne so that I could be with her. And then I had to try and find a way to survive in a city, which I don't know how to live in the city. So she's been training me how to be a city dweller.

And of course, I had to try and find some marketable skills. Somebody offered me an advance to write a book, because I was doing a few articles here and there and somebody saw it and would like to see that book please. Yeah, so that's how that happened. quite accidentally from my point of view, but then I guess from the context I'm embedded in and the relations that I'm embedded in, it was not unexpected. It was just demanded. So, yeah. I got to bring home the bacon somehow. So, that's how that works.

DSW: Evolutionary thinking about humanity has undergone a real sea change. And for most people, evolution is the way you describe it in your book. It's that iconic picture of ape leading to the European male. It is the cave man who clubs the woman and drags her back into the cave. And I'd just like to know the stereotype, or not stereotype. I mean, actually, received scientific opinion. You have this wonderful part of your book where you're in some classroom standing in front of some glass case with skulls and skeletons and things like that.

And the whole thing is set up to reify European superiority. And you're making fun of that like immature school boys. Maybe you could recount that event, but also what's behind the event in terms of the way the thinking about evolution was configured to be linear and to be more or less reifying this European superiority. Before we get to the current version of evolution, which itself of course, might not be without biases, but evolution as you knew it and describe it in your book, would be a really helpful starting point.

TY: I don't think our stories are that far apart. And I think it's always an unhelpful place to start in basic critique, and in a standpoint of antipathy. It's a wrong place to start, to go, "Oh, well, that's racist. So all that discipline's racist. Chuck it." So I think, I don't know, in my cheeky way in telling that story, I'm trying

to acknowledge that, then we can laugh about that a bit together, but then get to the business of bringing our stories together to find something that approximates the truth. I'm not really interested in using my story to try and cancel your story and come out on top, because I think that's basically what's happening in the world right now, and which is the cause of massive polarization and bloody cultural warfare, that's tearing the planet of part as badly as climate change, is as far as I can see. So for me, it's about doing that. Having a laugh about those things together, acknowledging those things, and just then trying to figure out what the story really is.

So for me it's like, yes, there's that history that there was a lot of pseudoscience in early kind of, I don't know, just really bad interpretations of Darwin stuff. And of course, the couple of things that he said like, "The advanced races will inevitably replace the inferior ones." You know what I mean? That was seized on, but they really messed up his theories a lot, which as you know, are more about cooperation than individual bloody dominance and all that thing, survival of the fittest, et cetera, et cetera.

DSW: This is a difficult thing to be able to manage. That if you look at historical figures, any one of them, take Darwin. I mean, in some ways he did so much with his theory. In other ways, he was just captive of the Victorian age and he couldn't see past the assumptions of the Victorian age any better than anyone else.

TY: You communicate through the memes that the other people around you are going to understand. I mean, you have to do that. I could talk how people are going to be talking in 100 years, but none of you would understand me. There would be no point. So anyway, they just went the wrong way with it. So there's a fair bit of pseudoscience came out of that. That was there in service of white supremacy, but particularly Anglo supremacy, because white was a very different thing back then. Irish people were not white. Cockneys were not white. It was about Anglo supremacy. John Cecil Rhodes set up a foundation to expand the influence of Anglo dominance and empire to create the Anglo sphere, to make it global.

That dream has been realized through that massive fortune, which is still in a foundation today, which is still taking care of that. The Anglo sphere is a thing. I don't know. White supremacy is a frame that helps with some things, but I think in terms of, just for this conversation, I think we can park that there and come back to it if we need to. But I think there are other things to look at that came out of the pseudoscience at the time. So we've acknowledged that, that's the source of the pseudoscience. Now, let's have a look at some of the fallacies that came out through that, that have really, really impacted a lot of disciplines from psychology to economics, to everything else, because you basically...you might be familiar with the works of Napoleon Chagnon? That weird anthropologist. And it would be easy to just go, "Oh, he's a white supremacist? I mean, he was in service of something else. He was really promoting that selfish gene free market, bloody rogue, winner takes all philosophy, that was since the Reagan and Thatcher era was all about fragmenting everybody socially, breaking everyone down, making everybody individual operators within an economy, to make that economic model work. And so he studied the Yanomani Indians, he called them the most violent people on earth. He instigated fights with them, and then escalated them, and then recorded them. And basically, from that really flawed data, showed evidence that humans are selfish, and we really just want to replicate our genes. And that's all we're motivated by, is our own replication and dominance individually.

I mean, a female anthropologist studying exactly the same people, found exactly the opposite, and wrote the book, The Continuum Concept, which was about, I mean, the most amazingly cohesive society with the absolute best child rearing practices that everybody should be looking at for raising children. So it's very different viewpoints. I guess we'll come back into this, because the question that you've asked, there's about an hour in it and I can't answer the whole thing, but these will be the narratives that we weave together. I know Megan's been looking at it, struggling with another project that's grounded in social brain theory. And there's at least two of the really big narratives that come through out of that

early pseudoscience, that is really affecting the social brain theory that's the foundation of another project that she's working on, collaboratively with another group. So-

DSW: What I'm trying to get here is your current take on evolution from your vantage, and then we'll get to my vantage.

MK: Yeah. Look, I just want to bring it back to thinking about the continuum, because I want to come back to I guess the foundations that have helped me to understand and make sense of this crazy project that I'm doing, that I really struggled to make sense of. I was thinking, "Well, how do I bring together these completely antithetical paradigms like blockchain and indigenous governance, and everybody asks the same question. It's like, "What have those two worlds got to do with each other?" And so that was a real struggle for me to pull that apart. And I had to just come back to the indigenous ways of knowing, being and doing. There's an epistemological ontological these two worlds that have to... I had to be able to get a rapid understanding of what it is that I'm in.

And this is the interesting thing about the standpoint part of it, is that I had an experience of going to Nepal during my undergrad, on a cultural study tour. And that was about taking us out our cultural paradigm, so that we could understand our own in some way. It was like an intercultural communications aspect to that cultural study tour. Actually, a big realization was that, while I was there, I felt that my identity as an Aboriginal person was actually more secure when I was outside of Australia, than it is when I'm here.

But that's more of a political thing, which is not really what talking about. So these ways, our ways of knowing, being and doing, are informed by our relationship with land. You might have heard the political slogan, always was, always will be Aboriginal land, when people are doing these protests for land rights and stuff like that. It goes a little bit deeper though. It's not just about ownership. It's not really I think even anything to do with ownership, because our traditional understanding of our relationship with place is not ownership, we are just part of it. So our knowledge and our cognitive—I don't have any expertise in neurolinguistic programming or cognitive neuroscience or any of that thing— but there's this relationship between spatial and as babies, as we're growing up, we have to go through these stages of being able to navigate our way through space.

That's a really critical part of the formation of the human brain, but then some of the theories that I'm sure you are familiar with, David, talk about how our communication of what we know to be in place and in space, informed our cognitive development and our language and things like this. And so for me, when you talk about having one foot in both worlds, my experience of growing up or being a human, was also like, I had a bit of one foot in both worlds in a way. So the indigenous side of things wasn't really about having a pedagogical rationale of this relationship with place. I mean, while I was growing up in north Northern Queensland, running around barefoot in the bush sometimes, but then also going inside and playing tapes and playing computer games and all that thing. But this understanding of place and understanding of all things being informed by place and our relationship with place, that knowledge underpins law, our indigenous law and our indigenous governance. Rather than getting into this social brain theory, well, I guess it is related to that because social brain theory talks about, so Robin Dunbar, a lot of his research looks at social groups in primates and the complexity of the relationships within these primate social groups and the complexity of those social groups. There's a correlation between the complexity and brain size and particularly around the neocortex, the frontal lobes of the brain. And because of the computational power, to use that word, that's involved in managing these complex social relations, the limits of those social networks numbers at around 150.

DSW: The famous Dunbar number.

MK: Yeah. So the famous Dunbar number. And so that's being observed in human relations as well. And I think, I'm pretty sure that Dunbar himself actually looks at Aboriginal societies and finds that pattern

within Aboriginal tribal groups. And so one of the things that's interesting is that Nick Szabo, a blockchain developer and he's a complete wonder-brain, he devised blockchain for the purposes of being able to overcome the limits of those social, that number, those social limits, those social constraints, essentially. Because once you start getting outside of that, exceeding those group numbers, then the groups will start to, they either no longer cohere well, or they'll split off and create additional groups because aspects like trust will fall away and, as those groups exceed. He's kind of, I guess, suggesting, and we're seeing it play out as to whether this theory is true or not, that computer code can do that work for us.

DSW: I mean, the whole point of blockchain is to guaranteed trust. Is basically, it's a mechanism to guarantee trust.

TY: Well, trust is the thing that doesn't scale beyond the Dunbar number.

DSW: Well, yes and no. And there wouldn't be a large scale society.

TY: Because transparency is lost if everybody doesn't know what everybody's doing.

DSW: Yep. Yep. Absolutely.

MK: just to finish that point of the continuum. What I think is interesting is that as we are starting to get into this world of now we're starting to get into the world of data and big data sets and data being like, a resource, I guess, if you think about it that way, we're starting to see issues around potentially data colonialism. I was just in a webinar last night that was presented by Nick Couldry and Ulises Mejias, and I think I may have pronounced his surname incorrectly. Who've just released a book called The Costs of Connection and it's looking at how data is colonizing human life and appropriating it for capitalism to quote the title of that book.

The appropriation of that data for capitalism, what's interesting is we are seeing cooperative groups starting to form as a way of trying to bring those smaller collectives back into relation with data. Trying to give the sovereignty back to individuals so that each person can potentially have control over their own data. I just feel as though this continuum, we've gone from land and our relationship with land to an increasingly abstracted relationship with the experience of being a human, but always there's this, I feel as though the collective seems to want to come back. It seems to want to come back throughout that evolution. Our relationships are a really important aspect that continues to play out, I feel, throughout this continuum of evolution. That's sort of.

DSW: Well, let me use some passages from Tyson's book as a kind of a text to have you guys reflect upon and to make some, what I regard as very key points. One of the points that you've just made as I would play it back is that cultures are first and foremost adaptations to the environment. And so if you take an indigenous culture, of course it has to be related to the land in a way that you can't really systematize. It might be that in a particular context, like you're standing next to a particular spot, calls for certain behaviors.

And there's going to be, let's say, landmarks and stories or something like that, just particular to that spot because that's what's needed. It needs to call forth the right behavior. And then if you're operating in another context or another place, then there's a different set, and so that's easy to understand as a set of adaptations to the environment that evolved by cultural evolution, but very difficult to systematize. In fact, why would you try? It's a Western conceit to think that there's some overarching logic to something like this and that you can abstract it from the environment, because that's how contextual culture is. And modern culture should be contextual like that too.

TY: It does work if it's embedded, David. But if it's about trying to create a new layer of abstractions through biomimicry, that's a different thing. It's not responsive. It's not actually responsive to the landscape. Now, I did hear you talking about some of your work, that there's work you did with the Bible. Where you were looking at the Bible and you were mapping it almost like a genome. And then looking at

how, at which elements of that genome were being expressed in different context. So one sect over here would be highlighting different passages in that genetic sequence, if you like. And then this sect over here in a different place, like they're in Alabama and they're highlighting these passages. It's like it's the same genome, however, there's different parts of it being expressed in different places.

You're talking about that in terms of a cultural selection thing going on. But here's the thing, and you are looking at, there's that idea that it's story. Story is the thing. And yes, we'd agree with you on that, but here's the thing, it's not in that text. It's not just in that story. For us, the genome, using that metaphor, like the genetic material is the landscape itself. The story is in the landscape of a particular bioregion. It is embedded in that landscape, but they're one and the same thing. You are, it's not, I think therefore I am, as we always say, it's I'm located therefore I am. That's Kombu-merri elder, Mary Graham says that. I mean, it's about where you're located in the landscape at any time as you were referencing before. But yeah, that's the genetic code.

And in each bioregion, it's a different spirit of place. And so therefore different parts of that code are expressed. But, it's still the same pattern because in the end, we're still looking at the same sky. In one bioregion here, we have a story for the Milky Way where it's a woman's hair. And in another one over here, to the east of that, there's a story that it's a canoe. Now these people meet and have met for ceremony for many thousands of years and they tell those stories together, those stories sit alongside. And the idea isn't no, our story is the right story and we're going to go to war with you about that. It's these stories come alongside each other and they compliment each other. It's looking at the same thing from a different angle.

It's the same way that science works. Science works really, and when you are playing billiards, you're using Newton, and then when you want your phone to work, you're using Einstein. You just, you shift between theories depending on the context. And so each bioregion has its own unique selective pressures, you know what I mean? Has its unique pattern of those. And that's the spirit of that place expressing through the landscape, into the culture. If humans are embedded in the landscape, then their culture, their language, everything will be a unique expression of that landscape. And so that's why you end up with all that diversity.

DSW: Tyson, did Bruce Chatwin get it right with his book Songlines? How would you comment on that? Because that's, a lot of people read that book myself included and get a sense of that, but I just wondered what your own commentary is and opinion is on.

TY: There are a lot of different points of view on that to the point where it's become a bit of a tug of war item, in the culture wars. And I pretty much just try and stay away from those things. But, so a lot of people say, "Well, Songlines is a mistranslation. And it's an Anglo word that's been invented that doesn't really fit what the reality is." There's another book called Songspirals, which is how a number of female elders from a particular community are starting to describe them. But it's that thing of trying to translate things from one language that's expressed from a particular bioregion, trying to translate that into a massive monolingual, monocultural, imperial trade Creole, which is a mishmash of a lot of different languages.

DSW: Okay. Well, you had something to say about that, actually.

TY: It deals with nouns rather than verbs and relations and processes. It is difficult to translate these things across. There's a lot of like, I don't know, back and forth and bitchiness about that. But, in the end, it's enough to know that there are these, the stories are embedded in the landscape. As I said before, they're expressed in the landscape. They're as much a map as anything else, they're a path, you can walk those stories and you can branch off from those into other stories. And ultimately they all connect up, which is how our Dunbar's used to scale and still do in some places where it's still working. But it scaled as a a syndication of syndicates or a, like what did you say Megan, a cooperative of cooperatives.

It scales fractally in that way through these connections in a continental common law. Around things like serpent story that binds everything together, many different stories. And just on Bora as a ceremonial thing that goes all over the continent. These things are a continental common law. And they allow us to sit together and bring our stories alongside each other because we're seeing the same aspects of creation, like the Milky Way, but from different bioregional perspectives. And we really, really, really like as human beings, to be able to see things from multiple perspectives.

If we're all standing on the beach, David, and we're looking at the full moon reflected on the ocean, you're standing over there and you're saying, "Well, that moon reflection is near those rocks there." And I'm standing further out the beach and going, "Are you insane David? That moon reflection is like right out in the middle of the bay. What are you talking about?" And the fact is that we're both right, and we're both wrong. And if you get 1,000 people on that beach, all sharing their story of where the moon reflection is, then you will arrive through the aggregate of all those stories, which are right and valid. Through the aggregate of those, you arrive at the conclusion that the moon is shining on every part of the ocean at once.

DSW: Yeah. That's well put. Now I'm going to read some passages and then to have you reflect on these passages and then to bring some general points out while we do this. Here is I think maybe my favorite passage from your book. It's about a page long, but worth every word. Emu is a troublemaker who brings into being the most destructive idea in existence. I am greater than you. You are less than me. This is the source of all human misery. Aboriginal society was designed over thousands of year to deal with this problem. Some people are just idiots and everyone has a bit of idiot in them from time to time. Coming from some deep place inside that whispers, you are special. You are greater than other people and things. You are more important than everything and everyone. All things and all people exist to serve you.

This behavior needs massive checks and balances to contain the damage it can do. There are a lot of stories that explain how all this began. And as a Brolga boy, traditional enemy of Emu, I know them all. My favorite one comes from, forgive me for mispronouncing what comes next, [inaudible 00:45:48] and Perth who tells the dreaming story of a meeting in which all the species sat down for a yarn to decide which one would be the custodial species for all creation. Emu made a hell of a mess running around, showing off his speed and claiming his superiority. Demanding to be boss and shouting over everyone. You can see the dark shape of Emu in the Milky Way. Kangaroo, his head is the Southern cross, is holding him down. Echidna is grasping him from behind. And the great serpent is coiled around his legs. Containing the excesses of malignant narcissists is a team effort.

TY: In the world that we're living in now, there's this dichotomy. You have to choose one side or another, or a point on a continuum between left and right. You have to choose. Okay. And the left basically is about, are you for the collective? And the right is about, are you for the individual? But in our way, in our Aboriginal world, we don't have those binaries in that way. Fresh and salt are supposed to come together and mingle. We have what I called dyads. They're almost like pairs like kinship pairs in our kinship system. We have dyads, these two opposing forces. They're two sides of the same coin. You as an Aboriginal person, as a human being, as all people for most of human history, you must express your unique individual fabulousness, and you must look out for your individual needs, but at the same time, you are bound within your relational obligations to the collective.

And that balances those two things all the time. But there's a tension of balance, and it seesaws. Now, sometimes that gets out of whack. You get somebody who gives into narcissism, to hubris, to self-interest and they split from the group and they do something horrible, they do something terrible and you get the tragedy of the commons occurring. You get multi-polar traps occurring that way. But you know what? That's a necessary part of creation. That Emu in that creation story is not a bad guy. That was important because you actually need that. You need periods of hysteresis that are caused by that.

Otherwise, the pattern will keep replicating the same way over and over and over again in this collective utopia. And what happens to that from an evolutionary perspective? You're going to get entropy. You're going to get a very sick, slow, stupid system arising from that, that cannot last. You actually need those little disruptions. You need those ones. That's part of the force multiplier that creates these massive evolutionary leaps.

I think I've got one minute left of the tight five. That goes part of the way, we can see this in our stories for how different creatures evolve from a dreaming perspective. Particularly you see it in the chimera species, like your platypus story, but also I prefer to think about the eel-tailed catfish. Now, this is an insane thing. All right. An eel-tailed catfish, it's definitely a catfish. It has the whiskers and it also has the stings in exactly the same place, the barbs, the poisonous barbs with exactly the same toxin as a regular catfish right there under its fins. But, it's entire body is covered with exactly the same sticky substances you get on an eel.

Like chemically exactly the same. It has the same markings as an eel. It has an eel's tail. How the hell did that thing happen? And we have story for that. We have story for these things. We have story for how the platypus happened with water rat and duck story. How did that thing end up with DNA from each of those things? How do you get these chimera species? And basically, always, those stories are about a transgression. They're about somebody who went out in their own self-interest and broke the pattern. It's in an interesting way, it's the pattern breakers and it's the transgressors and the law breakers, the narcissists that actually create the mutations, that make evolution unfold. That's the worst thing to have to come to grips with is the fact that it's your Trumps that make things happen from an evolutionary perspective.

DSW: I think that a point that I want to make is that so much of this is in accord with the current edition of evolutionary science. And what you call, I mean, narcissism is basically the original sin of not just human behavior, but for all social species. All social species, there's a tension between I am greater than you. That's an evolutionary force. I am greater than you is an evolutionary force and it basically has disruptive outcomes, not benign outcomes, disruptive outcomes of the Trumpian variety that when I basically claim myself to be better than you, that indeed is going to benefit me, but is not going to work out well for the common good. And that's why restraint is needed. So it takes a village to retain a narcissist, I think, is not only a human universal, at all scales, it's a biological universal. A biological universal that whenever you find a cooperative social species, they too have solved the narcissism problem. Cancer is an example of a narcissistic, emu-like behavior within our bodies and our cancer prevention mechanisms are the suppression of that. There's a tremendous generality-

TY: It's great how you said takes a village to contain a narcissist.

DSW: You said that, not me.

TY: Well, it's like that saying it takes a village to raise a child. Raising a child, that's what it is. It's containing a narcissist. It's actually trying to impart that tension of balance between your individual needs and your collective obligations.

DSW: Yes. And what we can say is that as you say, basically, is that indigenous societies have been honed like a polished stone over thousands of years to perfect this at the particular scale and in the particular ways that they do, that's something. And you can also say that modern societies run amok. And that basically emu like behavior has run amok. That's what the neoliberal model is. And although it is indeed innovative in some ways, primarily it's just plain fucking disruptive is what it is. And it's not going to correct itself. It's not going to correct itself until we restrain that balance. And once again, we could make a team effort to restrain narcissism. This is something of tremendous value, indigenous societies exemplify it. And so I just think, it made me so happy when I read that because I found it so in accord

with the way our scientists are thinking about it. Now let me go right to another passage because it's on the same topic.

TY: Well, just quickly, there is an adaptive immune response from the sort of, I guess the noosphere, I don't know, from that global system of culture, not the noosphere, but you know what I mean? Yeah. China. You're going to get in response to that aggressively individual economy and culture that's destroying the planet. The system has thrown up an immune response in very aggressively collective culture to oppose it. I just thought I'd throw that in there.

MK: And sorry, David, you asked me to respond. I do have something to contribute and it's we are seeing this playing out in, with big players, like say, I don't want to name, large social media corporations, for example.

TY: Does it begin with F?

MK: It could. It could begin with a G, it could begin with an A. This Large media corporations that we are seeing that have essentially taken open source codes, resources that were intended for the commons and for the benefit of the ideals of the visions of the internet, the ideals of the cyber punks . And they've taken those codes and kind of, whether it's the demands of the neoliberal model that has shaped the way that it's played out. Because if you've got a model where the imperative is to increase returns for the shareholders, then your imperative as a CEO is to increase the market share for the shareholders.

So you're going to have these, the system actually creates narcissists. There's something about in fact, the system that is corrupted and that's what has to change. But what's fascinating is that the system, even though we have this corrupted system that demands narcissism or narcissistic tendencies, you're still seeing something that's human that is not part of this. I think it precedes the neoliberal paradigmatic values. And that's coming back and going, I mean, those big, what is it? I don't know. There's an acronym. It's F-A-G-A or whatever they are, these big media entities. They've come out of innovation.

They themselves were a response to, what do you call it, like disruptive innovation. They started as startups to provide for the needs of collectives and socialities and stuff like that. But then, they've become the cancer. And it's so frustrating that there's something inherent in this neoliberal code that it's like there's a cancer in it, inherent in it. And so we are seeing now, they're these platform co-ops or data co-ops or these new movements that saying, "Well, how do we get the sovereignty and the autonomy and the collective action back? How do we redistribute the power so that we can keep these malignant narcissists in check?" And we are seeing that team effort. These small little projects that are startups themselves. And yeah, I guess it's just how do we reset the code of the model, the economic model that we're under to reset the system?

DSW: Yeah. Well, and a great book on this topic, which you might well be familiar with is Timothy Wu's, The Master Switch, which shows how in all of these technologies, starting with the telegraph and the radio and television and everything, has a tendency to be captured by monopolies. And then the innovation drains out of them and then forms around the edges and all of that. So what we have here are tremendously general principles in play, which manifest themselves in the nature of indigenous societies, and then manifest themselves once again in a modern context.

In fact, they've manifested throughout history because it is indeed the original sin of social life in all species of this conflict between lower level striving. Buddhism said it, life is suffering. Suffering is caused by craving, desires, and then we have to overcome that. It's embodied everywhere because that's how fundamental it is. And so I think there's a wonderful overlap here. But now let me go to the next passage, which is on this topic. And it has to do with the relationship between individual and community. You say, in my community, there is a phrase which is repeated daily, nobody boss for me. Yet at the same time, each person is bound within complex patterns of relatedness and community, communal obligation. Indigenous models of governance are based on respect.

I'm going to use that word "respect" for social, ecological, and knowledge systems and all of their components are members. There's a kind of a subordination that takes place, which is implied by the word "respect". Complex kinship structures reflect the dynamic design of natural systems through totemic relationships with plants and animals. Respectful observation interaction within the system with the parts and the connections between them is the only way to see the pattern. You cannot know any part, let alone the whole without respect.

And now let me go to one other place with which you say this cultural humility is a useful exercise in understanding your goal as an agent of sustainability in a complex system. It is difficult to relinquish the illusions of power and delusions of exceptionalism that come with privilege, but it is strangely liberating to realize your true status as a single node in a cooperative network. There is honor to be found in this role and a certain dignified agency.

You won't be swallowed up by a hive mind or lose your individuality. You will retain your autonomy while selectively being profoundly interdependent and connected. In fact, sustainable systems cannot function without the full autonomy and unique expression of each individual part of the interdependent whole. So here, what we're doing is we're articulating something where there's this balance between the part and the whole, the individual and the system, and you do it beautifully. And I think here we've identified another universal. This is something which manifests itself in well adapted indigenous societies. It manifests itself elsewhere and where it's not manifested, it needs to.

And when I talked, for example, with enlightened corporate leaders, including one that I work with named Toby Shannon, who is the COO of Shopify and Shopify is the anti-Amazon. It's the second largest online retailing outlet in the world. But they have a very different model. And when you hear Toby talking, it's like this. He sees Shopify as a member of a worldwide ecosystem. Shopify wants to be present a hundred years from now. Shopify knows that the way that it thrives is by causing the ecosystem to grow. It's not hard. It's not hard. In fact, the more we can persuade people to adopt that relationship in which they maintain individuality and can have the great status that we all want, frankly, but does it, in the context of contributing to a larger system, that's what describes indigenous societies, what describes some other societies and what should describe all societies is the way that I would put it. Because very deep functional principles are in play.

TY: It comes back to scale. And I guess if you tilt too far towards the individual side, then scale becomes an issue. So in our law, we have ceremonies for increase, not for growth. So our economies, our ecologies are based on increase, and that's not about increasing the size of the system or the territory or the being. It's about increasing the complexity within it. It's about increasing the relationships and the combinatorials that are going on in there. So we focus on that increase, and we have a lot of stories that basically reflect the idea of the maximum power principle. That when something tilts out a balance and tips too much towards the individual interest, then it grows and that's okay for a fair bit because you actually, you get good economies of scale there.

And that's important in evolution. A system will grow a species, a being will grow in size and it will gain like 25% efficiency at each doubling. So you end up with your blue whale, for example, which is a hell of an efficient thing, but you can't get any bigger than that because that's the maximum power principle. Beyond that, it becomes inefficient. Now we have heaps of dreaming stories that warn us against that behavior of scaling too far individually. That there's a fair bit of it that's healthy, but if it's not balanced within the rest of the evolutionary context around it, the rest of that fitness surface... Like for example, you can't have a lion that's suddenly a hundred times stronger than all the other lions.

It has to be responding to all of... It's that co-evolution thing. Otherwise, you end up with everything dead and we have all heaps of stories about that. And it's usually about giant beings that started out smaller and then suddenly got bigger. It's like a Dr. Seuss book. So we have that Tiddalick The Frog who drank up all the water and grew to a gigantic size. We have a huge codfish dreaming on a number of

summer lines that go right through the Murray-Darling basin right down to the sea. These are really important stories, but they are usually about one being that has scaled too far, selfishly, and is now destroying the landscape in some way. And it always ends with, with some other entities, Aboriginal people, hunting that thing down. Oh, there's a giant Dingo story. It's exactly the same thing, but it always ends with that thing being hunted down, killed, and distributed throughout the system.

A, so it's distributed evenly throughout the system, like all the waters throughout the landscape from Tiddalick The Frog and even just the body, and the genetic material of the giant codfish, it is split up, not just into, so it's distributed in number, throughout the system, but also diversity. So it can't just be all codfish in that system. That codfish is broken down to become thousands of different fish species that are then distributed throughout the system, because you need that diversity throughout the system. Now, any one of those species can increase in number and can increase in complexity, efficiency, a million different ways, but the size of any single entity cannot scale too much. Otherwise, the law of the land, the dreaming, is going to give you a big antitrust smack out of nowhere and sort you out that way.

DSW: Well, this brings me, I have two more major points to cover. I may progress to the next one, which has to do with…Megan, yes?

MK: David, I'm sorry to interrupt you, but I just want to add, you talk about respect... When you raised this point about the no boss governance model, but then also this respect. You highlighted respect and you talked about single nodes and agents of change balanced with the interdependent whole, or an interdependent whole. And it made me think about, well, so then what are the protocols? What are the protocols that inform sanctions for bad behavior?

And it also made me think about, when you talk about care, sorry, respect, I think about care. And so I think about, and particularly with any healthy system has to have care and it has to have freedom in it, and it has to have agency. And I was in an agency. I'm doing part of a research sprint at the moment through the Berkman Klein center. And we had Mark Surman from Mozilla come and speak to us. And he defined empowerment in the data context as meaning whether a person can have power and agency and the ability to act in the digital space. So that's in the data context. Now empowerment in any context really means ensuring that an individual agent can have power and agency and the ability to act.

And so that's freedom. And so, one of the theories that I'm looking at in my PhD is governmentality. And so basically that is, I don't know if you know much about Foucault's governmentality theory, but it's really, it's like the power center distribute or having their... It's basically getting the needs of the center, being performed by the agents out at the right out to the peripheries. So you, as an entity in relation with the state, you start performing the state's functions essentially, and you start self-policing in a way, and you start limiting your own freedoms.

There's an issue here, and it's related to that governmentality where, instead of the center performing the state role or limiting the freedoms deep out into the system. Instead, we have to flip that model and enable agency to be deep into the system, like go to go right at, to be distributed, right out to the node so that every node has the ability to behave freely. And then the needs of that node and the smaller communities, they will understand their own needs and they will respond to what their needs are. If there's a need for education, they'll respond to that and create systems that enable that to happen appropriate to their own needs. If there's a need for, I don't know, whether it be increasing wellbeing or health . They can be more responsive then, and they don't have to be labored by bureaucratic sort of... The burdens that just stop them from being able to act.

I mean, we've got a relative in a remote community at the moment who's just had both of their cars smashed in by somebody who's got mental health issues. And because of their remoteness — it's not because of their remoteness. It's because of the limitations of the system that don't enable them to be able to respond. How can they make sure that they're safe? How can they get those vehicles back into...

Being able to respond immediately to what their needs are without it being prohibitively expensive. And so it's about ensuring that there is freedom and agency that goes right out to the margin as remote as it needs to be without having to rely on these beyond arm's length centers of power that essentially don't care. They don't care because they don't have to. And so care and respect. It's not just respect that has to be distributed across the system it's care. And we have to make sure that all of those, that that's the value that comes through that enables care to be the driving force in some way for every action in the system.

TY: David often says something, Megs, that expresses that paradox beautifully. I think it's something along the lines of, and you can correct me, David, but it's like self-interest only confers advantage within a group. And if you start to think that through, it's like... It is beautiful because it just demands a thought experiment immediately, and you start extrapolating that out. It's like, ah, yeah. So you do get evolutionary advantage within the group, within what the group has established, the infrastructures that are established there. You can get in there and pollute those comments and get an individual advantage. But then that destroys the group and you are gone anyway. It doesn't confer advantage to your group in amongst other groups. You know what I mean? It means your group is going to die and the more cooperative groups are going to replace you. Yeah. Yeah. So it's beautiful.

DSW: Megan, you raised a bevy of issues that I want to address. The meme is, selfishness speaks altruism within groups, altruistic groups speaks selfish groups. Everything else is commentary. So there's your meme. But thank you, Tyson, for resonating to it as I resonate to these passages of your book, but you've raised so many issues, Megan. One of them is the need for new cultural evolution. What you're saying is, is we have situations now, for example, people in remote areas, they're not connected the way they should be. They need to be better connected. That would almost certainly require a technological component to it. This is culture, basically not working the way it should. And new cultural evolution is required for it to. We need to be quite deliberative about that, and the need for new cultural evolution.

And another point is, is that cultural evolution takes place, whether we want it to or not. And if we don't manage it, then it's going to create problems, not solutions. We don't stop cultural evolution. It's happening and it's happening in indigenous societies. And here's where you speak to that Tyson. Another passage that I love. Blackley talks about decolonizing movements that have been so intent on rejecting Western systems of thought. They focus too much on ways of knowing rather than ways of being, causing a lot of indigenous knowledge to be lost in theory, rather than being embedded in daily life. On the other hand, a recent obsession with ontology has swung the pendulum back the other way as people seek authentic but individually unique foundations for the traditional knowledge they report on in various media. And all of this branding and rebranding of indigenous knowledge, things can become lost or contaminated.

This is not like replacing wood with... I love this part. This is not like replacing wood with roofing iron in the manufacturer of fishing boomerangs. That's fine. As it demonstrates continuity in that activity in the response to change. It's more like somebody making up a dreaming story about the Japanese visiting Australia thousands of years ago when they hear old man Juma joking about black fellow ninja star.

Indigenous knowledge is constantly under threat from such weird amendments and misinterpretations from within and without. From within and without. The physical apocalypse of invasion came with a bang, but our cultural Armageddon is more of a whimper, a gradual contamination and unraveling of communal knowledge by exceptional individuals. And so I think this is so profound. It's not as if indigenous knowledge is this thing that's preserved intact, and that we can return to. Not at all. And especially if it gets changed in a way that destroys the restraints of the emus, then if it gets reconfigured so that the emus can run amok, then that's what'll happen. Even within indigenous society. You don't need outsiders to do it for you because you've disrupted the checks and balances, right?

TY: Yep. And look, the biggest contamination of our culture is in two grand narratives, big stories, very big, wrong stories that have been absolutely necessary to developing a free market economy with individuals running out, running around. Just everybody, self-interest corporation unto themselves to create this, I don't know, this lie of the free, the invisible hand of the marketplace, the rising tide that lifts all boats, et cetera, et cetera. Now the two wrong stories that have contaminated our culture more than anything. And you see it coming through the social brain theory that we were talking about yesterday, because Megan was looking into it as part of this project. It was part of the theoretical base. So it's this idea that primates, in order to achieve a a self-conscious consciousness of whatever it is that is distinguishing our amazing brains or whatever, is that they arrived at that through two massive evolutionary pressures.

One of them is, is scarcity of food, so that your social group ends up having to develop more complex cohesive evolutionary responses. And the other one was an increase in predators, an increase in the amount of predation within the ecology. So it's the idea is that it's those two pressures that actually ends up producing a brain that's capable of that. So for a start, we get these two stories coming out. The first story is the idea of harsh survival, so that your classic story of nature red and tooth and claw, that there hasn't been enough to eat and there's always this scarcity. And only now we're starting to achieve some abundance as human beings through agriculture, through civilization, et cetera.

And it's just not true. Like we know this, not just from our stories, but even from our subsistence practices on wasteland now that's been completely destroyed. There is still an abundance of food to be found there. We know there's always been heaps of food, even in poor seasons and even on poor country there is an abundance of food. So we're aware of that, but we've taken it on board in our culture, this idea that we were surviving in a harsh landscape and it was really tough. And so therefore we are really tough people. We've taken on board that story and incorporated into our culture and that's also come along with ideas about gender divisions of labor and all this sorts of thing. The other story, that's the big problem there is the idea of predators. That the human brain and consciousness has evolved out of hyper vigilance.

And that's why the Cro-Magnon brain was 10% larger than homo sapiens brain, because they had to be hyper-vigilant all the time. They're walking out on the plains. They never know when a tiger is going to jump out and get them. And the fact is that if you spend any time with indigenous people, you understand that there's a completely different relationship with predators, because we always know where they are. There's nobody in my community who has ever been taken by a crocodile, for example, there's no story about it. There's not even a dreaming story about it, because you always know where the crocodile's are from a thousand seasonal indicators. And you have relationships with that crocodile. Traditionally as a man, your first haircut as a baby would be tied onto a baby crocodile's head, that crocodile would be released and you would have a relationship with that crocodile.

You could call that crocodile to you. And there's photographic evidence of this, of all the men in my family, swimming out into the river, holding up the tails out of the water of their crocodile. We have relationships with predators as human beings. We always have. We haven't been walking around... All of these pseudoscience, it comes out of this idea of people imagining themselves, Bear Grylls dropped back in the shit with no rule of law and minimal equipment and having to survive in a harsh landscape. They'd be worried about predators. They'd be worried about getting enough food. And then once they sort out that part of Maslow's pyramid, then they're moving up to the next one. What am I going to do next? Well, there's no rule of law, so I'll probably just be raping and killing. And so therefore, you know what I mean?

And all the stories of the violence of human beings and the nastiness of human beings and how we're a virus and a plague upon the world, that's destined to destroy it and each other. War is as old as… So you get Noah Yuval Harari. He can quite seriously put on a page as if it was scientific fact a third of all

paleolithic deaths were homicides. Where the hell? What data set are you looking at to arrive at that? That's just pseudoscience.

DSW: Well, I'm going to push back.

TY: People projecting themselves back into an environment that they don't understand and could never understand.

DSW: No, Tyson, I'm going to push back on some of this, which is good. That's what's fun.

TY: Yeah.

DSW: And I think, and I can tie it back to Megan. And when we think about human cultures, as ecologically, as adapted to various niches, there's many niches out there that are inhabited by human cultures. And one of those niches, one access to variation is studied by my colleague, Michelle Gelfand. It's an axis that's called "from tight to loose", "tight to loose", and a tight culture has strong norms, strongly enforced. You really got to toe the line in those cultures. Those are not innovative cultures. Because solidarity is so important, basically group level solidarity in warfare or in response to other collective threats is so important, that these whole cultures are adapted for collective action. And because those selective pressures don't change very much over the decades and centuries, there's really not that have much need for innovation.

It's not as if the next generation's going to be different from the last. Quite the contrary. And so those are the cultures on the tight end of the continuum. Then there's the loose end in which is much more flexibility, much more individual freedom to do what they want. And of course there's the innovative cultures. Nowadays, we really need innovative cultures. And so when we design our current and future cultures, please let them be innovative. Let's design them on that. But on the other hand, we've seen with COVID, COVID has been one great natural experiment. Which cultures responded better or worse to this collective threat, which actually got their acts together? And which ones didn't? There's a natural experiment for you, which maps onto tight and loose pretty darn well. And so as good ecologists, we should really expect to see that cultural variation in indigenous cultures, no less than modern cultures.

And so this whole concept of tight and loose was actually first articulated by an anthropologist. His name was Pelto and he basically categorized indigenous cultures this way. Why shouldn't he? And then Michelle actually characterized modern nations that way. Comparing, for example, Germany and Brazil would be an example of a tight culture compared to a loose culture. One clever way that she measures it is to go to any city in the world and look at all the public clocks, all the clocks that are for the public and just record what time they say and a tight culture like Switzerland or Germany, there'll be a lot of agreement and in a loose culture like Italy or Brazil. There's your proof, there's your proof. I mean, can't argue with that. And so I have a German colleague. He's a very famous economist. If he's one minute late for a zoom meeting, he just profusely apologizes. He spends a minute talking about how apologetic he is begging for my forgiveness because he's a minute in…

TY: So consensus is the variable that's measured for tight culture?

DSW: Well, in that case, I mean there's lots and lots and lots of measures of this. There's a big literature. So, I think that this is the kind of expectation of cultural variation. There's no single thing we can say about cultures, at least not in this respects. And on that point, I think there are some cultures old and new, indigenous and modern, where there was chronic between group conflict at various scales. Chronic, never ending. And when I had a conversation with his holiness, the Dalai Lama a couple of years ago, organized by the Mind and Life Institute. And in preparation, I did a lot of reading. I read a lot about Tibet, the history of Tibet and Tibetan Buddhism and the cultural evolution of Buddhism took place in the context of chronic warfare at various scales. Never ending warfare. And so it is indeed the case that

there are some cultures, not all cultures, but some cultures in which a very large proportion of the men die violent deaths. That's just the way it is. And the one that I'm familiar with-

TY: Well, it is now, but those cultures don't survive more than a few hundred years.

DSW: Well, no.

TY: Those cultures are wiped out when they go bad that way. So if you have got a culture that's more than a thousand years old and it's been involved in violence with another group for that entire time, then what you have there is a very highly ritualized rule governed violence technology. Conflict technology. Yeah. That's been developed whereby both of those cultures can be sustainable over the long term. But if it is as you are saying, hyper violence, chronic violence, no culture will survive that for more than a couple of centuries.

DSW: I beg to differ and so there's a point of disagreement that we can carry on. But look at animal societies, you look at animal societies, some of the primate societies that are despotic, a lot of conflict, only a little bit of cooperation. What that means is that basically the emu-like behavior is prevalent. The ability to restrain emu-like behavior is limited. And so therefore these are emu-like societies, and that's the end of the day. They've been that way for thousands of years. It'll be that way for thousands more years. It's just, unless you change the structure, why would you expect anything to change? And so that's the way it is. And if you look at human--

TY: Well, so can I ask you, I think China's a really good example. So if you look back like medieval times and even before that, they had gunpowder before anybody else and they used it with fireworks, but it was illegal. It was illegal for them to use it as artillery. So they did not use it as artillery, but that's illegal for what? There wasn't one big unified China, you had lots of different warring groups and kingdoms. How did they all stick to the rules of not using their fireworks, fun time, bloody gunpowder against each other? What was the governance pattern there?

And so you ended up finding that you've got a lot of the warfare was highly ritualized and it was a lot of honor rituals of individuals fighting each other, and making beautiful poetry about it. And lots of strategizing and moving around and you get the art of war and all this sort of stuff.

So you ended up with, instead of innovating, which I think a lot of people, and here's the problem where confirmation bias in the stuff that you're talking about, people will be focusing on the innovation as, "Well why didn't they make bombs?" So who actually progressed with the technological innovation? Well, those people by acting within those boundaries legally and in ritualized ways with each other, they were actually able to have increase in psycho technologies of innovation, that the west found to be primitive. But now people are rediscovering as well, Sun Tzu is pretty fricking amazing.

So the technologies that they developed were psycho technologies, were heuristics, were theories, things like this. Big stories, good stories. And so they increased their complexity within those cultures. And that's where the advancement lay, so that you ended up with people who actually had sanitation and were very cleanly, clean and long lived and had pretty amazing cultures.

Whereas the culture that's looking at that saying it's primitive because they didn't make a fricking cannon. These guys turned up with their cannons on our beach, just a couple of centuries ago, bleeding from their eyeballs and asses, couldn't manage to hardly crawl up the beach. And when they did build a village, they were still throwing their shit out in the street because they hadn't discovered sanitation yet. And their medicine, that we're supposed to be grateful for, that they brought here, the extent of it was bloodletting. They were nicking a vein in their arm to let the evil spirits out. These were incredibly primitive people who, but under the rubric that you are talking about, they would be called an advanced civilization because they had fricking muskets, because "Oh they invented advanced technology!".

But, the Chinese had the same technology, they just used it for fireworks instead. They all made an agreement and somehow managed, even though with their deadliest enemies, they managed not to compromise the commons, not to fall into that much stake of multipolar traps and wipe each other out. And they got to actually increase the complexity of their civilization. This is something that the west is yet to learn.

DSW: Well, Joe Henrich have you encountered the acronym Weird Western Educated Industrial

TY: Yeah, Industrialized Rich Democratic. I'm most of the way through that book. What's his name, Henrich?

DSW: Yeah, Joe Henrich.

TY: Ah, beautiful. Absolutely beautiful book.

DSW: Yeah. And in his other book, The Secret of Our Success, he has a whole chapter on European explorers who basically, they become shipwrecked and there they are in some hostile clime for them. And being European and whatever intelligence they might have as individuals, it didn't remotely enable them to survive. They could only survive based on the kindness of the indigenous people who had been living there for a long time.

Now that's because he also tells a story, not to go too much into this, this is actually a real event in which a very remote Inuit population in like Northern Greenland, suffered from an epidemic that took out all the elders. And so a lot of the wisdom from that culture got knocked out, and it just result in a loss of the cultural toolkit. They didn't actually know how to build kayaks and igloos as well as they did before, and they didn't easily recover that knowledge because that was actually a multi-generational process that generated that knowledge. They had to get it from some other population when they finally made contact.

TY: And that's the secret with the distributed syndicated systems.

DSW: The secret of their success is their cultures.

TY: That’s important, because it means it's an anti-fragile system because we're interdependent, not just within our tribes, but between our tribes. Even the people we have warfare with, we still have ambassadors in there who are, you've got people in different clans there who are keeping the entire knowledge of your tribe. Even if we're at war, who are keeping that on the off chance that there might be a red tide or something, and your tribe will get wiped out. It will be able to be replaced again. And that knowledge of that place will be able to come back up, yeah.

DSW: So I think that the way I could, because we could go on forever, but I think we probably want to wrap it up. Your children are starving, so you need to get back to them. I think that what I love about this conversation, is that there's a lot of common ground in the way that we're talking. And that I think that the more we could have a single conversation, which is what your book is all about, what you do is all about, that we can. Because what we're talking about is basically general principles, very general principles, which were manifesting in all of these different contexts. An Indigenous context or modern context and so on. But I do want to make a point, I think, if you can just stay with me for another minute.

That what's so very important for all of us, and you don't even have to use the E word to be able to say this, is to be able to recognize both function and dysfunction where they exist. You don't want to have a category error where you're looking at something that's dysfunctional and you try to render it as functional. So this could be true to a machine, if it's a machine that's well working, then it's functional. If it's broken down, then it's not and something is needed to fix it. And very often I think of course, that's a clear cut case, that we're looking at something that's cultural, or in nature. And we just think it should be functional, we think it should be harmonious. And so we impose that expectation onto it, when in fact it

wasn't functional. No I'm sorry, it wasn't. It was exploitative, let us say, or it was just something that didn't work.

It was a mismatch, a cultural mismatch, we know about those. It was the fish out of water phenomena, fish flapping around on land is not functional. Don't pretend that it is. And so that ability to recognize the presence and absence of functional organization. Why is it so important, is because the entire need is to bring functional organization into being where it does not currently exist. And that's especially at the global scale because it's a global society that we're working towards, and the reason we don't have it, is because of emus of various sizes, including Leviathan emus that are running amuck and that need to be restrained. That's dysfunction, there's no function there, That's just chaos. And it's all kinds of just so stories that are out there.

I mean, it's so interesting that one of the things I noticed about your book, Tyson, and it's true for any storyteller, anyone who tells a story, is the imperative need to make a connection between your story and the action that it motivates. And if you don't do that, then you'll lose your reader. You just won't sell books is what'll happen. And so that connection between the story basically, the narrative and so on, and the actions that it motivates, that is such an imperative in human psychology, that when any one of us is in a position to tell a story, if we're not making a connection, we'll lose the reader is what we'll do.

And so the stories have to have that functional quality of motivating action. But than in addition in this world, in this day and age, they need to have a degree of scientific authenticity as well. And we really have to avoid the stories that they do a good job of motivating behavior. But the fact is they're made up, we call that fake news.

TY: Well, what I like about the scientific method, is it's an attempt to control for observer effects. And I mean, that's really important. And what I like about contemporary science, it's different from those pseudosciences that arose a century, two centuries ago, where an anthropologist could be on a ship, you'd land in New Guinea with a fleet of ships, with a massive standing army. And then you come and clear a big area of coast, claim that, set up a settlement, displace a whole heap of people who then have to flee inland. Who were then refugees, who end up fighting with other people. And then all those people realize, "Oh my God, that's a massive standing army. We're going to have to come together and form some kind of standing army of our own.".

And so a temporary hierarchy forms, and then you send your anthropologists in and then they go, "Oh look, this is the great chief of chiefs here. Hey, they have the same hierarchies that we have. It's just natural. Oh, look, there are very warlike people. Some of them are eating each other!". Could it be because they're fricking hungry because you destroyed their fricking yam fields, and there's a whole heap of refugees?

So there's a lot of observer effects there that modern science would absolutely control for and sort out really quickly. But, unfortunately there are a few of the narratives from the pseudosciences of centuries ago that are still polluting the foundations of our disciplines. And it's very good to do the natural experiments you're talking about, and look back before and rerun those ones, and control for those.

DSW: We need to acknowledge, here's another universal statement. It's hard for anyone to see past their own culture. Past, present, or future. And so that means that we have to really talk about Emu behavior. It's not intentionally Emu behavior. It's so hard is what it is. And first of all, unless we're inclusive in the scientific community, that's the first thing. We have to expand the whole scientific enterprise to include so-called non WEIRD culture, in addition to WEIRD cultures. And then it's just basically checking each other's story, helping each other see past the tissue of our own cultures, is very hard to do that for members of a culture to see past their own assumptions. And so therefore it becomes a multicultural collective effort and that's needed.

TY: That another thing that modern science is doing really well. It's able to facilitate dialogue across lots of different disciplines.

DSW: Better.

TY: And across vast spaces as well and different cultures. I think science is doing very well at that.

DSW: Yeah, well so I'd like to think that this-

TY: I'm totally on board with that project.

DSW: Yeah, and I think that this conversation will contribute to it, and I hope that as we do our things, including organizational things, then we'll find ways to work together so this won't be a one off conversation. So this will be something where we can find ways to continue to work.

MK: Hearing you talking about these ideas of function versus dysfunction, my question is, you've used the words universal and global, and we've also talked, we've covered throughout this conversation, that balance between the local and the interdependent wholes. So global versus local. And so I'm thinking about localization and diversity and agency and freedom, and my question is, is it possible to arrive at, I don't think it needs to be said that there is a global and universal understanding of what signifiers of function versus dysfunction are.

What signifies harm, what signifies wellbeing, what are the indicators that we need to be able to read, as information within our local and diverse centers of knowledge, that inform that we have a global agreement on what constitutes function and dysfunction for everybody, so that we are keeping harms in check?

And I think that's probably really the challenge that we are probably faced with, is just saying well, what are the limits of the costs? When is it okay to start encroaching into harm? When is it okay to enslave people? When is it okay to have people living below the poverty line? And all of these questions of when is it okay to accept that the entire east coast of Australia is on fire and then, on the opposite side of the world, as the globe rotates, the east coast of what's now known as the United States, is on fire. And all of these kinds of questions like, when are we going to start coming together to say, "Let's agree", cause we've got Kyoto agreements and governments that are saying, "Well, we're going to sign on to that environmental global policy, but we're not.".

And I know that these conversations are happening at global levels, but I think there's an issue when you've got people in positions of political power who just refuse to play the game. And clearly we are seeing that representative democracy is failing. I don't know that there are any systems of governance that are effectively addressing the meta crisis that we are seeing ourselves in, in the world at the moment. And so I think that the questions are, what are our protocols globally for recognizing those signifiers of dysfunction?

DSW: Before I address that, Megan, which is not to say that I have answers, I wanted to get back to this idea of a social brain, because there's a version of it, that's going to be another conversation that you can listen to. It's called the Social Baseline Hypothesis, And it goes like this; the one constant of human evolution, was to be a part of a small and largely cooperative group, even when those groups were warring with other groups. We occupied all these different niches, so much differed, but the one constant is that we existed never alone as individuals, always in the context of small and for the most part, highly cooperative groups.

And as a result, the genetic evolution of our brains and bodies seamlessly integrates into personal and social resources. Our brains and bodies don't distinguish between our personal resources and our social resources. And as a result of that, that if you isolate an individual and you truly remove them from a cooperative group context, the brain and body interprets that as an emergency situation. And the most

therapeutic thing you can do is simply return the ant to its colony, return the person to the small cooperative group. So much good can take place. Self-regulation…no, no, it's always group regulation in this context, and everything that we associate with cognition, like decision making, memory, perception, actually is a group level phenomenon. Distributed memory, I mean you have a fine sense of that from indigenous societies. Everything you need to know is not in your head, absolutely not. It's all in other heads. You have to get it from there and so on.

So this is the sense in which the idea of a social brain, a group mind, collective, this collective that, as far as our psychology is concerned, is something we have to rediscover. It turns out that the social psychologists of a century ago knew this better than we do because of individualism basically. Methodological individualism in the social sciences caused us to forget this. So this is a social brain hypothesis worth wanting, and which has real validity. Now there might be other social brain hypotheses that don't, but I just wanted to get that out there.

And I'm having a wonderful conversation about that with two experts, Jim Coan. And let me just give you my favorite experiment, two if you don't mind, because they're so wonderful.

Jim is a clinical neuroscientist, so he puts people in fMRI machines and things like that. But he also sees clients. And so he had a client who was an old World War II veteran, and was suffering from late onset trauma, post-traumatic stress. And the old man wouldn't do anything that Jim asked him to do, he was just totally unresponsive to therapy. And then he says, "I want my wife with me." And so Jim had never had this request before. He'd only treated individuals. And so he said yes, and first he treated his wife as a bystander, and the old man was no more responsive than before. And then his wife said, "Let me hold his hand." And so she did, and immediately he opened up to therapy, and Jim was amazed and he wanted to know what went on in the brain of this man caused by holding hands?

And so he embarked upon a set of experiments for which he's become famous, in which he'll put people in an fMRI machine. He'll threaten them with electric shock with the electrodes strapped to their ankle, so their brain is going crazy. And he does that under three conditions, alone, holding the hands of a stranger, or holding the hands of a loved one. And holding the hand of a loved one has this tremendous calming effect because there's a social resource in addition, and the brain is just automatically accounting for that. All subconscious accounting for that. And that's what caused Jim to come up with his social baseline hypothesis.

And the other experiment by his colleague, Dennis Proffitt takes people to the base of a long hill, and you ask them to estimate the slope of the hill. So they do, and then you do that under conditions in which you deplete their personal resources like fasting, or wearing a heavy backpack, or doing a workout, your personal resources have been depleted.

And it turns out that the way we're wired perceptually, is not only are we less interested in climbing a hill, we actually perceive it as more steep. So if you deplete your personal resources, you actually estimate its slope as higher, or lower if you add resources. That's just the way we're made. And so against that background, we add a fourth condition. You, or you with a friend standing next to you. And if you put the friend next to you, what do you think happens? The slope of the hill goes down. So that seamless integration between personal resources and social resources, which takes place beneath our conscious awareness is what it means for the individual brain to be not an autonomous unit, not an autonomous unit is hooked up with others with cooperative others. That's how we're made as a species.

TY: Unilateral action within that, that's what sidesteps the maximum power principle. And all of the checks and balances that you have in the law of the land, as natural laws and even the laws of physics, this is how the destruction of systems occurs. You know, it's through that unilateral action. And you think you are innovating, but you're really just that hypothetical lion that's suddenly a hundred times stronger and faster, and can only result in everything on the Serengeti being wiped out. You know what I mean?

You can't power up beyond what the rest of your community is doing, as an individual. And when I say community, I don't mean just your like community. I mean human, nonhuman, your place, the land, everything around you.

So I can show you this very quickly, a natural experiment that I've been doing, actually, it's not natural at all. It's an unnatural experiment, sorry. It's a a practical experiment that I've been doing in this, like a physical thought experiment in unilateral innovation. So what I wanted to do was to look at something that I decided was a problem in my culture, and then make a new innovation, a new technology in my traditional culture, unilaterally that I would introduce. So I'm looking at this and I'm going, "Well, this could be more a efficient. Why do I have to carry a spear thrower, and a club, and a throwing stick and a digging stick, and a little spear, a short spear. What if I combined all of these things, so that I only had to carry one implement? I could have this black fellow Swiss army knife?".

All right, So I actually made it, I created this abomination, that's quite pretty. And I think if I unleash this upon my culture, this would destroy entire landscapes. And you're thinking, "Well, how?". That's obviously a really good innovation. That means instead of having to carry eight implements, you've just got it all there in one, you just have to have this, and your spear, and you are all good. It flies really well, it's a good throwing stick, it digs really well. I can spare a stingray with it, if I'm stuck without a spear, or I can use it to throw a spear.

I've got a club, I can fight with it, I can dig with it, I can do everything. But it would destroy our entire landscape, because all of those tools, you need that diversity in those tools. That's come from a landscape and a culture that's embedded within a landscape. Each of those tools is made from different plants, different trees, different woods in different seasons and that human activity acting upon those plants in those landscapes, actually has an impact on the environment. It directs you towards what areas of the landscape you have to burn, and at what time. So what I would be doing by introducing this amazing innovation to my culture would be within a few hundred years, completely destroying the landscape, completely destroying the culture. I would be unraveling traditions that were thousands of years old that are mapped into a landscape.

I would be undoing a whole heap of stories, and everybody would be walking around with one of these and the people who had them initially would gain a competitive advantage over the other people in the tribe, and then those ones would have to do that. And then it would be a race to the bottom, because someone's got to make the next one now. It's like, "God dammit, how can I work a fire stick into this, so I could, you know.". And then that guy would be the one on top, and then it'd be a race to the bottom, and then we're all dead.

So I've made this abomination that could completely destroy our people. This is the WMD right here of our culture, and the WMD is unilateral action, unilateral innovation, individual genius. These things are world killers and you got to watch out for them. Like Megs said, she can't even exercise on our own, you got to bring people along with you. And I think you are saying the same thing too, bro.

DSW: You know, I think we should just end it here at that serious point. So what we're not going to do, world peace, we'll leave that out. And so we've done everything else, and so I think we'll leave world peace until the next time. How's that?