8. Inner Space, Outer Space & Network Thinking

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Future Sense is a podcast edited from the radio show of the same name, broadcast on BayFM in Byron Bay, Australia, at www.bayfm.org. Hosted by Nyck Jeanes and well-known international futurist, Steve McDonald, Future Sense provides a fresh, deep analysis of global trends and emerging technologies. How can we identify the layers of growth personally, socially and globally? What are the signs missed; the truths being denied? Political science, history, politics, psychology, ancient civilisations, alien contact, the new psychedelic revolution, cryptocurrency and other disruptive and distributed technologies, and much more.

This is Future Sense.

Nyck: Good morning to you, and in the studio with me, my co-host Steve McDonald here on *Future Sense*—good morning, Steve.

Steve: Good morning, Nyck. Lovely to be here again.

Nyck: I must say, your light body is just radiant today. You're emanating something which I would say probably small children and animals respond to, I'm guessing.

Steve: Funny you should mention that.

Nyck: I'm referring to something you told me off air, of course.

Steve: Yes. I just came back from a conference down in Coffs Harbour and I walked into the dining room one morning at the resort for breakfast and there were two young twins who must have been about 18 months old or something, who just couldn't stop staring. It was quite funny.

Nyck: There's something about that guy's aura. I don't know what it is. Just arrived on the planet here and all I'm seeing is a bunch of dull grey people everywhere and suddenly a couple of rainbow-looking beings walk into the dining room. Oh, my goodness. It's very nice to be recognised at least by somebody, isn't it?

So you're with *Future Sense* this morning. We're going to be talking a little bit about the conference that Steve has just come back from—the *Illuminate* conference just down in Coffs Harbour, and from that, also, the launch that you, and actually now myself, are going to go down to—the *Mind Medicine Australia* launch in early February.

Steve: Yes, looking forward to that.

Nyck: Absolutely; and with that, we're going to talk about the first trial that has been approved at *St Vincent's Hospital* in Melbourne for the use of psilocybin—magic mushrooms, if you will.

Steve: Big news.

Nyck: Big news for treating depression. We'll have a little bit of a side story regarding cannabis; we're going to look at the democracy index around the world—it's a bit surprising—radio signals from 1.5 billion light years away; genes and complexity (is there a relationship?) and a few other things that might come our way this morning here on *BayFM*. Thanks for joining us.

Nyck: You are tuned to *BayFM* and you are with *Future Sense* here with myself, Nyck Jeanes and Steve McDonald here in the studio. As we said earlier, as I mentioned, out of the blue almost it seems—and Steve will be able to expand on that a little bit—a report just the other day that psilocybin, the psychoactive compound from magic mushrooms, is being used to treat depression and anxiety in terminally ill patients in a new trial at Melbourne's *St Vincent's Hospital*, which is pretty amazing, headed by clinical psychologist, Dr Margaret Ross. It will begin in April with 30 patients recruited from the hospital's palliative care who have not responded to antidepressant or anti-anxiety treatments. Pretty amazing development, this is.

Steve: Yes, wonderful news, Nyck. It's been in the pipeline for quite a while but we haven't made an announcement until just recently. The big breakthrough for us came really in late 2017. As some of our listeners would know, I'm co-founder of an organisation called *Psychedelic Research in Science and Medicine* (*PRISM*,

https://www.prism.org.au), which was created here in Australia back in 2011 as a non-profit organisation to get some psychedelic research happening here in Australia. We've been knocking on doors for a long time and it wasn't until late 2017 that we were approached by some people from *St Vincent's Hospital* in Melbourne, from their palliative care unit, who expressed an interest in the research, which has been happening in the USA around psilocybin to treat near-death anxiety and terminally ill patients.

Nyck: Yes, because we're fairly well behind the United States and some places in Europe on this kind of research, and your activism with this, with *PRISM*, has largely been, as I understand, with MDMA for PTSD, but also with these other psychoactive substances.

Steve: That's right, and that was really due to Rick Doblin's visit to Australia in 2010, where he put forward some money to try and get some research happening here in Australia. Although we were interested in getting research happening, Rick's offer of some money was really the catalyst for *PRISM* to be created and so we were focused on MDMA, and still are, and we had made some progress towards getting an MDMA-assisted psychotherapy trial here in Australia, and we're hoping to progress that further this year, too.

Nyck: As we've mentioned before, and you're probably aware on the show, too, in the US, MDMA for PTSD is now at the third stage, which is the final stage with the FDA before its approval to go on the schedule with appropriate care and application.

Steve: That's right, and it was declared a 'breakthrough medicine' or 'breakthrough therapy' by the FDA, which is the American equivalent of our TGA, which is wonderful. What that means is that during the phase 3 trials, *MAP*S [*Multidisciplinary Association for Psychedelic Studies*, founded by Rick Doblin, https://maps.org] can actually start offering treatment to the general public, and so this year they are starting to licence clinics around the USA that people can go to and pay for the MDMA-assisted psychotherapy to treat post-traumatic stress disorder, which is pretty amazing.

Nyck: Absolutely amazing. Well, this trial is about psilocybin and it's about end-of-life terminal patients. The rate of depression amongst terminally ill patients is high, with up to 77 percent of patients thought to suffer from the condition. It's also been found that the more symptoms that a patient is experiencing of a disease, the higher the likelihood that the patient will experience depression. Anxiety is also common with up to 48 percent of terminally ill cancer patients reporting major anxiety symptoms, and approximately 14 percent are classified as having an anxiety disorder, so the

opportunity here is huge, and of course, the research that's been already conducted on psilocybin in the United States in this kind of trial is very—well more than just very promising—it's quite extraordinary in some ways.

Steve: It is fantastic, yes, and a friend of mine from Texas actually produced a movie called *A New Understanding*, a documentary film about the research in the USA, which I'd recommend people take a look at if they're interested. It's a wonderful story. (https://www.youtube.com/watch?v=TIVIfQaqVG4).

Nyck: It's interesting how it actually works, of course; maybe we can look at this. Actually, I guess they don't actually know how it works yet—that's part of doing a trial, isn't it?

Steve: Well, they've found a direct relationship between the strength of the spiritual experience that people have when they're given psilocybin, and the outcomes; and the stronger the spiritual experience, the better the outcomes are, so that's pretty direct, I guess. At the end of the day, this is about giving people access to other dimensions of consciousness so they can understand that death is not an end, but simply a transition to another dimension of existence.

Nyck: And on that note, I just remembered I sent you a thing that was discovered by my dear friend Julia the other day from a chap called Bush—who looks a bit like a Bush, did you notice that?

Steve: Actually I'm not sure if I had a chance to look at the link, so keep talking.

Nyck: The guy talking about death not being an endpoint (https://www.youtube.com/watch?v=aLaVutWXju0).

Steve: Oh, the doctor. I did look at that, of course.

Nyck: It's fantastic.

Steve: Yes, I actually just looked at that this morning. I didn't realise his name was Bush.

Nyck: Yes, I kept on looking at him and thinking like this guy almost looks like he's related to *the* Bush's—because Bush is a pretty common name.

Steve: I guess so.

Nyck: The video's relevant in terms of how we see death; how we approach death. You just mentioned that notion of end of life when you have a terminal cancer, terminal disease, and, of course, you are facing that transition point pretty radically. In terms of psilocybin, though, what it does do in these doses, according to this article, is decrease blood flow to the amygdala, which is the emotional processing centre of the brain responsible fear reaction—so that's suppressed under the influence of psilocybin in the sort of tests that have so far been studied. Also, psilocybin decreases activity in the default mode network. Can you explain a bit about the default mode network?

Steve: Sure. Not in too much detail because I'm not a doctor.

Nyck: You're not a doctor?

Steve: I'm not a doctor and I'm not a scientist, contrary to many of our listeners' beliefs, I'm sure, but what I can say is that the default mode network is a number of brain regions that regularly talk to each other in a specific kind of pattern during our normal waking consciousness, and what the research into psychoactive psychedelics is showing us is that these substances actually quieten the brain down. It's interesting because when we take these substances and go into altered states of consciousness, we get flooded with a whole bunch of information—our sensory awareness increases and we can sense things that we don't normally sense—and the original theory was that they were activating things in our brain, but in fact, with the benefit of magnetic resonance imaging studies, we now know that they actually quieten the brain down. So it seems that many of the things in our brain are actually active filters which narrow down the amount of sensory input that we have, and when our brain is quietened, we are opened up.

Nyck: Hmm, which is exactly what—I always remember this—Aldous Huxley, in his famous *Doors of Perception*, talked exactly about this in the 60s, I think, when that book was written, about the brain being like a funnel: all the information is coming in but we manage, through these brain regions and how they're articulated and how they work together, they limit that amount of information to a receivable and a manageable amount of information in normal human consciousness.

Steve: Yes and this research is also interesting in helping us understand certain medical conditions and also people who are just more psychically open, for example—that it's potentially because of this filtering role that the brain has and the fact that perhaps their brains are really quieter than others and so they have more information coming in—and it could also lead us to understand things like schizophrenia better, where people are hearing voices all the time and that kind of thing.

Nyck: Yes. According to this article, the default mode network is a network of brain structures associated with recalling memories, daydreaming and thinking about the future. It's also associated with understanding of oneself in reference to memories as well as the theory of mind, understanding others motivations and actions. So you can imagine if this network is quietened down, there's much more access to just the present moment and just being with whatever actually is here right now, inside and outside oneself.

Steve: Yes, and it's interesting as we're moving into this new paradigm and moving on from the Modern Scientific-Industrial way of thinking and being, to this emergent, network-centric, humanistic-focused level of consciousness, that our awareness of networks is growing. We're moving to a way of being human that's very network-centric and consequently we're discovering networks—networks in the brain, networks in our genes, which we'll talk about later in the show—it's really interesting.

Nyck: Yes, that notion of networks, which is complex—it's a system of systems—and when you look at the meaning of network as not just a system, but a system of systems, I guess that's what you're talking about, isn't it?

Steve: Generally, in this sixth layer of consciousness I described in Clare Graves's work, it's a network-centric viewpoint which is looking at systems, so this is where we dive into systems theory and we look at how the different parts of the system are connected and interact with each other. It's really only when we move to the seventh layer of consciousness, which is into the Second Tier—the big leap; the "momentous leap" as Clare Graves called it—that we start to look at systems *of* systems, so different systems connected together, which is a more multi-dimensional viewpoint. And so, at Layer 6, we're mainly just looking at systems theory in that we're looking at a single system and all the different pieces of the system, and how they're connected together.

Nyck: Sort of like the difference between two-dimensional and three-dimensional chess.

Steve: Something like that, yes.

Nyck: Just before we finish on this particular topic—and it's really wonderful that this trial starting in April at *St Vincent's Hospital* in psilocybin is happening, that's fantastic news—just riffing a bit, philosophically at this time, since you mentioned Graves's work there, what does this show about where we are right now? After the 60s when everything was closed down with regards to psychoactive substances, we're arguably in a new psychedelic revolution. What is this saying about where we're at as a species right now? What is it offering us?

Steve: These changes in our consciousness come in waves, and if you look back over the last couple of hundred years, we can see that there have been waves of this new way of thinking that have come through, particularly in the 60s, as you mentioned, where there was a sudden focus on social justice, human rights, emotional awareness, the use of psychoactive substances and those sorts of things. But at the time, there wasn't enough structure in society, or connections between these diverse groups of people who were kind of popping into the future, to maintain the momentum, and so it was quite easily squashed down by the dominant paradigm, which was the Scientific-Industrial way of thinking. But now, at this time in history, we have the Internet, which they didn't have before, and this is like a scaffolding that we can hang onto and connect with other like-minded groups around the world, so all those little bubbles that have slowly been popping up around the world can now see each other and talk to each other thanks to our communications technology.

It's also an indicator that we are moving beyond the materialist mindset which we had in the Scientific-Industrial era. That focus on conventional science really had an effect on our spirituality, in that you couldn't measure these strange, subtle awarenesses that we have around spirituality on a dial in a lab, and so they didn't exist, therefore. But as we're moving beyond that scientific mindset, we're opening up to more spiritual things again. And this is a common theme. If you look at the consecutive layers of consciousness as we go up this spiral of evolution, when we're in collectively-oriented systems, there is a much greater likelihood that we will be exploring spirituality and pioneering new forms of spirituality, whereas the individually-oriented systems, on the other side of the spiral, tend to be more focused on changing the outside world, whereas the communal-oriented systems are focused on changing our internal world.

Nyck: And the time is certainly ripe for us to be looking at our internal world—many of us on this planet right now—as the external world is not really providing us with perhaps what we expected it to provide.

Steve: No, that's right. Evolutionary tension is building.

Before we continue, I must mention the *SBS* report on this psilocybin trial in Melbourne (https://www.sbs.com.au/news/dying-patients-to-be-given-magic-mushrooms-at-melbourne-hospital). There was one line in there which I must correct on air where they said "one dose can last for six months or more" which kind of implies that you'd be tripping for six months on mushrooms, folks, but that's not the case. What they're implying there is that the impact can last for six months or more.

Nyck: Yes. You are tuned to *Future Sense* here with Steve McDonald and Nyck Jeanes. You should know the text line, or perhaps you're listening for the first time: (0437)341119. Text in and it comes up here on the screen for us to respond to. If you've got any questions or any comments you'd like to make, please do. You can also check us out on Twitter @futuresenseshow, and we have a website, www.futuresense.it that you can also check out now.

Nyck: You're tuned to *BayFM* 999 here on *Future Sense* with Nyck Jeanes and Steve McDonald, and we've been talking a little bit, before the break there, about the new research at *St Vincent's Hospital* on psilocybin. Of course, these kind of substances are in the news a lot, from all directions, and we will come to a bit of a piece on cannabis in a minute, but we thought we'd just catch up a little bit on the pill testing debate as it's moving forward.

Australia's peak body for physicians, just a couple of days ago, have called on the Premier in New South Wales, Gladys Berejiklian, to introduce pill testing trials at New South Wales festivals, telling her that there is sufficient evidence to support the intervention. That's the *Royal Australian College of Physicians* who have written to her and to her state and territory counterparts, imploring her to reconsider her hard-line stance against pill testing. That's from the *Sydney Morning Herald* the other day (https://www.smh.com.au/national/nsw/evidence-backs-pill-testing-trials-physicians-tell-berejiklian-20190117-p50s1i.html).

Steve: Yes, that's wonderful news, it really is, and it's highlighting the fact that sometimes our politicians speak from a place of ideology rather than science.

Nyck: Sometimes! That's very generous of you, Steve.

Steve: Sometimes. I think, you know, we're all used to being careful about trusting what politicians say because we know that often they'll say whatever they need to say in order to try and get more votes, which is a shame, but that's a reflection of our political

system and how it's been designed and who it's attracting, in particular at this time in history.

So this is a very refreshing thing. Following one of the previous deaths at New South Wales Music Festival, the Premier of New South Wales called together a few "experts" (in inverted commas) that she had chosen just to look at the issue. She instructed them very specifically not to consider the possibility of pill testing and then she subsequently mentioned many, many times in the media that there was, in her opinion, no evidence provided to the government that pill testing actually reduces harm. Of course, there's a plethora of evidence from overseas' experience that pill testing actually does reduce harm and saves lives, so it's a very ideological standpoint that she's been speaking from and one that is simply based on a rigid, irrational belief that she's picked up from somewhere—quite possibly from religious influence, I would speculate—and she's blinded herself to the evidence simply by choosing not to look at it and instructing even her experts not to look at the evidence.

Nyck: Yes. I mean, right there you've got a completely undemocratic and unrealistic and unscientific approach to this issue. In a cabinet meeting or in a high level meeting of the supposed experts, that the Premier instructs them to do so is not good enough.

Steve: Yes, it's certainly unscientific and it's a values issue, of course. We can relate it back to the layers of consciousness and this kind of thinking is typically found at Layer 4, which is the Authoritarian-Agricultural era values, which are still very prominent in modern societies in many, many different countries, including here in Australia. Typically, at that level of consciousness, we latch onto what we see as a truth, which is always provided by some higher authority—and often that higher authority is a religious or a God figure, but not always. Sometimes people latch onto the law or the military or the police or something like that.

Nyck: Or indeed Donald Trump or other leaders in this country, surprisingly, but yes, it's true, folks. You've probably noticed that among some people that you know.

Steve: It's certainly very relevant at this time in history that we start taking notice of the values of our leaders and just assessing where those values come from and whether those values are valid contemporary values or whether they're leftovers from an ancient era—and, in fact, Layer 4 is very much a leftover set of values from an ancient era. Sometime in the future, I idealise, we will select our leaders on the basis of the sophistication of their values in their consciousness but we haven't quite got there yet.

Still, it's wonderful to see this letter come out—all credit to the *Royal Australian College of Physicians* for putting that on paper—and I think it has actually triggered some action around the country. I saw in a Tweet that Ross Hill sent us this morning, that Fiona

Patten, MP from the Victorian Parliament, said that the crossbench there is banding together to push for a pill testing trial in Victoria now, which is wonderful.

Nyck: Very good. There's a story from barely a week ago in the *ABC*, and you also might want to check out its claims about pill testing—whether they're true or not—that debunk some of the claims that Premier Berejiklian and others have made (https://www.abc.net.au/news/health/2019-01-15/pill-testing-claims-put-to-the-test/10703370).

Claim 1 is that pill testing leads to more drug use—there's no evidence of that.

Claim 2, a quarter of people under 30 are using drugs. Well, this is actually true in terms of statistics. The 2016 *National Drug Strategy Household Survey* found that 28 percent of people aged 20 to 29 had used illicit drugs in the last year, compared to 16 percent of the general population. Cannabis was the most commonly used drug, followed by ecstasy, cocaine and methamphetamines. Right there, you've got 28 percent of young people using these substances in one form and the other—so clearly, it's not just a few random people here. There's a lot of people who are in the firing line—and I hesitate to use that sort of phrase, but there I did—in terms of going to festivals or going to other situations and purchasing dubious drugs. Why not, therefore, test them?

Claim 3 is that pill testing creates a false sense of security. This is also debunked, because people are advised if there's something in them. If quality is not up to standard, they're advised and they're told and they're warned.

Number 4 is pill testing can't detect new synthetic drugs. That's not entirely true—it can detect anything that shouldn't be there and thus is red-flagged. It can predict, if not identify, unknown substances and so these substances are red-flagged or whatever is in that particular sample is red-flagged.

Claim 5 is that pill testing doesn't confirm drug purity—same sort of thing.

And the last claim is that there's no evidence that pill testing saves lives, and in this article, all of these are debunked to one degree or other. There's sufficient evidence out there in the world to show that pill testing is definitely an advantage, helps to save lives. It may not save lives, but it certainly helps to do so.

Steve: One of the things that's been missing from the public debate, too, which I'd really like to mention, is the fact that people enjoy taking these illicit drugs. I mean, there is the issue that under prohibition, there's no guarantee of what you're getting and that's a big part of the harm—the risk—associated with taking these drugs. Under prohibition, we leave the manufacturing and distribution to criminals and unfortunately, there's no indicator of what you're buying, how to use it safely and those sorts of things. In the same way that you might go to a chemist and get a prescription medicine, you always get a pamphlet that says, 'don't operate heavy machinery' and anything else that you need to know about it. You're guaranteed that you're getting what's on the packet and

you know what the dosage is, but this is not the case with illicit drugs, and so the fact that they are illicit, the process of prohibition actually creates a tremendous amount of harm by not regulating these things when a large chunk of society is using them. Most of the argument in the media fails to mention the fact that kids take these things—and adults, too—because they're fun and they're often productive.

We can refer back to this research study which is about to start at *St Vincent's Hospital* in Melbourne, whereby people are treating near-death anxiety with a psychoactive drug, psilocybin. I think that those of the general public out there who are using illicit drugs and have benefited from using them, need to be talking more openly about the fact that they are actually useful, they are healing, they provide amazing insights, they are, in many cases, healthier for you than alcohol and tobacco—and there's good research out there that demonstrates that—and these things are just not mentioned in public discourse because of the taboo, because there's this general thinking that drugs are bad: If you take drugs, then you're bad, you're a criminal, blah, blah, blah. But I think the momentum is gathering and it's time for people to speak out more freely.

Nyck: Yes, well, of course, in society, as you said, we have the legal drugs, alcohol and tobacco, which are seriously damaging; we have the opioid epidemic in the US and certainly one gathering storm here—that's another issue there with the legal substances that we can take. And secondly, as you're speaking, people—young people in particular—take these kind of substances, I guess, for one reason, and that is to do with the layer of consciousness that we talk about and Graves's work, Layer 6, where they're seeking to connect more readily; that they do enable a certain degree of connection for lots of people, lots of the time.

Steve: Yes, particularly with things like MDMA—they enhance that human connection, which is one of the key drivers of this new values set at Layer 6.

Nyck: They enhance empathy, don't they, I guess you could say; compassion, to some degree, at times.

Steve: Absolutely. Sensory awareness is expanded, and also it's expanding our multidimensional awareness, which is creating a very useful and interesting state of consciousness as opposed to things like alcohol, which tend to dumb us down. And of course, we're faced with a hierarchy, I guess, in government and organisations mostly comprised of an older generation that perhaps haven't used these substances and are very used to alcohol. That's the drug they know and so there's this straight out bias against anything that's not familiar to them.

Nyck: It reminds me of an anecdote—I do not know if it is true or not—of the 1980s when MDMA/ecstasy came into the public marketplace, if you will, and in the UK, where, of course, soccer (football) is the sport of everybody. There were a lot of riots in the 80s in various stadiums, and some deaths, and I was told years ago (you may know more about this, too), that the introduction of ecstasy into the scene in the UK meant that a lot of football fans would take ecstasy and go to the game, and suddenly all the angst disappeared and people would even be seen celebrating and hugging supporters of the opposite teams when there was a goal kicked. It was an extraordinary transformation. Maybe just an anecdote, but you can imagine it happening.

Steve: I've actually seen a quote in the media here in Australia, and I think if I remember correctly, it was Mick Palmer, who's a former Commissioner of the Australian Federal Police, who came out and said that most police would much rather be dealing with people on the street on a Saturday night who were smoking cannabis or taking MDMA because it doesn't make them violent like alcohol does. There's tremendous evidence to show that alcohol is a drug that tends to trigger violence, and in fact, here we are in Byron Bay, and I'm not sure what the current statistic is, but at one point we were the third worst place in New South Wales for alcohol-fuelled violence.

Nyck: Yes, and talking about cannabis, another very interesting report in *Forbes* magazine—of all places, in *Forbes* magazine, yes, indeed—researchers at the *University of Bonn* and the *Hebrew University* have discovered that low regular doses of tetrahydrocannabinol, that's THC, the active constituent, or one of the main active cannabinoids found in marijuana, may help to keep our brains from slowing down as we get older (https://www.forbes.com/sites/janetwburns/2017/05/08/daily-dose-of-cannabis-may-protect-and-heal-the-brain-from-effects-of-aging/?sh=57f09d392e44): "Published in the journal Nature Medicine, the German study revealed that while younger mice suffered a performance drop under the influence of THC (they couldn't play the guitar that well), the psychoactive chemical gave older mice a considerable performance boost, even putting them on par with younger mice", so this is good for us old folk. "As has been similarly observed in humans, younger animals excel at the tests when 'sober' but tend to struggle significantly under the influence of THC. 'Mature' and 'old' mice, on the other hand, struggled with tasks as consistent with their brain age as at first, but saw a huge increase in performance with THC infusions." Interesting.

Steve: It's really interesting, yes. I'd be interested to find out more information about that, so if you're listening this morning and you know older people who smoke cannabis and you find that it's enhancing their brain performance, text us and let us know.

Nyck: Text us in: 0437 341119.

So that's in *Forbes* magazine. Very interesting. Previous research also at the *University of Bonn* suggested that the brain's main cannabis receptors and neural pathways are closely related to brain health in later life and seem to play a role in preventing brain degeneration when active. That's the endocannabinoid system in our bodies, which has all the receptors for the cannabinoids in THC and other places where cannabinoids arise.

Steve: That's right, and if you don't know what that prefix 'endo' means, it means that we actually have receptors which are made to bind to cannabinoids and we actually produce our own.

Nyck: You're tuned to *BayFM* 999, and thanks for your texts here. We will come back to some of those a little later on, probably.

We've been talking a lot this morning about the new psychedelic revolution in a sense, and the increasing focus on the medicinal and other uses of some of these substances as we move forward into this era that we are now entering quite strongly, and seems a lot of things are happening in Melbourne, I just noticed. We were talking about the psilocybin research at *St Vincent's Hospital*, and we're both going to go down to Melbourne in the middle of February to the launch of *Mind Medicine Australia*. Tell us a bit about this.

Steve: Sure. In 2017, we had a number of breakthroughs, and when I say 'we' I'm talking about *Psychedelic Research in Science & Medicine* (PRISM) and also *Entheogenesis Australis* (EGA), which is a community-based organisation in Melbourne that's been running conferences on psychoactive plants and substances for many, many years down there, and really produce world class events now (https://www.entheogenesis.org). They had a wonderful event in late 2017, and that event, which was at the Yarra Valley, was quite critical in terms of moving forward our efforts to get something happening here in Australia. We had a representative from *St Vincent's Hospital* there, we had Rick Doblin, the founder of *MAPS*, the American research organisation which has been leading the MDMA research, and a bunch of other wonderful researchers from around the world. We also had a couple of people approach us around that time, just before the *EGA* event, offering some funding to help us get some research started here in Australia, and that's been one of our ongoing issues, is just trying to get financial support and also support from institutions, particularly here in Australia. They were big obstacles for us for many, many years but in 2017, we really jumped both of those hurdles.

One of my co-founders of *PRISM*, Dr Stephen Bright, moved from Melbourne to Perth to take up a job at *Edith Cowan University* and was able to get some interest from *Edith Cowan* in supporting an MDMA-assisted psychotherapy study here in Australia and it's

an ongoing project over there that we're hoping to make further progress with this year. Also, we had the approach of *St. Vincent's*, who had seen the publicity around the research happening in the USA with psilocybin and near-death anxiety, and so they were interested in doing something in their palliative care unit, so all of a sudden we had some funding, we had some openings at institutions which allowed us to take some steps forward, and one of those funders who approached us expressed an interest in trying to make further progress in a broader sense here in Australia, not just around research, but potentially around drug law reform and those sorts of things.

As a consequence of that, we began thinking about ways to further the cause, started discussing setting up some kind of an institute that might be able to lobby separately from *PRISM* as a research organisation, because it's not always in the best interests of an organisation trying to get scientific studies happening to be politically lobbying as well, because sometimes they are compromised, particularly with such a sensitive issue as psychedelics where there's this big social taboo and people don't even want to talk about it sometimes.

Anyway, the outcome of that was that a new organisation is being created called *Mind Medicine Australia*, and you can find them online at https://mindmedicineaustralia.org.au. The President of *PRISM*, Dr Martin Williams, is the Chief Scientific Officer of *Mind Medicine Australia*, and also one of our other committee members from *PRISM*, Melissa Warner, is the Executive Officer. *Mind Medicine Australia* is a registered charity, acting as the central node for the promotion of regulatory-approved and research-backed psychedelic medicines to assist with the treatment of mental health in Australia, so they're really being created as a promotion group, a lobby group, that will have the freedom to do a whole bunch of things that *PRISM* is probably better off leaving to another organisation so that we can simply focus on getting the research happening and doing the actual research.

Mind Medicine Australia is going to be launched by Professor David Nutt.

Nyck: Yes, who is the head of Neuropsychopharmacology at *Imperial College London*, no less, and the psychedelic research group under the leadership of Professor Nutt at *Imperial College* is one of the world's foremost psychedelic research laboratories, so it's pretty amazing having him come out.

Steve: They've been doing some wonderful stuff, and particularly some pioneering work around MDMA and the use of magnetic resonance imaging (MRI) to understand what's happening in the brain with MDMA, and I think it was really their efforts that came up with the information we were discussing earlier on in the show about the default mode network and how it gets quietened down by psychoactives. David Nutt was infamous, actually—made infamous a couple of years back—because at the time he was chair of the *UK Advisory Council on the Misuse of Drugs*, advising the UK

government, and he came out in the media and stated that taking MDMA is statistically safer than horse riding if you look at the hospital admissions.

Nyck: Didn't go down very well with the Crown.

Steve: It didn't go down very well at all. In fact, he was sacked from that advisory role, but in the process became world-famous, of course, and is a wonderful, wonderful pioneer in terms of psychedelic research.

Nyck: Fantastic. He's had an incredible history. He's been the president of the *European Brain Council*, the *British Neuroscience Association*, the *British Association of Psychopharmacology* and the *European College of Neuropsychopharmacology*. He was previously, as you said, the Chair of the *UK Advisory Council on the Misuse of Drugs*, saying from his experience what should be going on and getting sacked for it. There you go, there's the abyss—ideology versus science.

Steve: He was out here a couple of years back speaking at the *APSAD* conference, which is a conference that the psychology world has on drugs and harm reduction, that kind of stuff, and Martin Williams, the President, and myself, had a chance to sit down and chat with David for about an hour. He is really, really lovely guy.

Nyck: Yes, so just quickly, as I said, you've been down at the *Illuminate* conference in Coffs Harbour over this last weekend with a bit of a plethora, or let's say a wide range of approaches to new thought, new dimensions, new concepts about beingness.

Steve: That's right.

Nyck: You were presenting there with Dr Stephen Booth, who's been on this show a couple of times as one of our guests.

Steve: That's right. It was the *Illuminate: Aspects of Consciousness Symposium*, and it's organised by the folks who previously organised the *Afterlife Explorers Conference* and also the *Close Encounters Conference*—so Mick Turner and Kathryn Hand—and I was invited to go and speak about entheogens and the mystery traditions—entheogens being psychoactive substances that are used specifically for creating a spiritual experience—and the history of that practice in the mystery traditions, in other words,

the non-religious spiritual traditions that have taken a structured approach to spiritual exploration and the expansion of human conscious throughout history.

So that was wonderful, and my good colleague and friend, Steven Booth and I also presented a two-hour workshop on light body activation, which is something that we've spoken about on the show before, which is really about how this big leap in consciousness, which is beginning to happen for certain people around the world at the moment and is coming down the track for many, many more people, involves a change to the body's subtle energy fields. Most people would be familiar with the chakra system and the energy meridians as described in Indian and Chinese medicine, and Steven Booth and I are working with some work that was documented by an American chap called Dr. Mikio Sankey, who has two PhDs and a strong background in Chinese medicine and acupuncture, and he's put together a system based on acupuncture, which is an extension of the traditional Chinese version, which is mapping changes in our body's subtle energy field which come along with this increasing consciousness. In fact, the subtle energy geometry that manifests as we go through this big shift in consciousness is actually helping anchor the consciousness in the body. We were talking about the theory of that and we also did a practical exercise during which a bunch of people had some interesting altered state and energetic experiences.

Nyck: It's interesting to me, too, this growing awareness of, articulation of, experience of, the light body. It has a lot of heritages, of course, in many spiritual traditions, this notion of the light body.

Steve: Yes, I've been reading about these things for many years of course, and I'd never come across anything really concrete. It always sounded very fluffy whenever I read about the light body, and it implied that we were leaving our physical bodies and going to live somewhere else in a light body, but in fact, the work of Mikio Sankey is the first material I've come across which really provides a grounded map and an explanation for what it means; and what it means is the manifestation of a complex, sacred geometric pattern of subtle energies which is layered over the existing system, so it doesn't replace the existing energetic system we have, but it upgrades it.

Nyck: Is this the same thing as the Merkabah?

Steve: Yes, it certainly is the same thing in that the Merkabah that they talk about is part of our subtle energy field—a pattern in our subtle energy field, yes.

Nyck: Geometric, like a crystal—a sort of light crystal that surrounds and permeates the physical and ultra-physical bodies, if you will.

Steve: Certainly crystalline in terms of its shape and structure, yes. Not literally crystal, but subtle energy in form.

Nyck: Yes, very beautiful.

Steve: So yes, *Illuminate* was an interesting event. Lots of way out and unusual fringe presentations, which is wonderful because it's these kinds of things that help us feel into what's coming down the track in the future, and it's those dreamers and imagineers who often tap into what's next for humanity. So a broad spectrum of stuff, it was a lot of fun, connected with some interesting people.

Nyck: You often delineate—and this is not a judgement—but delineate between those presentations and modalities, if you will, that are driven somewhat by or largely by fear of the future, fear of what's coming, the fear of what's happened before, and those which don't. Can you expand a little on that?

Steve: Sure. I guess the distinction comes around this transition point into Second Tier consciousness. If we look at the first six layers of consciousness, from Hunter-Gatherer consciousness through to this emergent, network-centric, humanistic way of being human, which is just appearing and maybe in the next decade or two will become the dominant global paradigm, all of those first six are really underpinned by a fear of not surviving. There's a strong survival focus—everyone at different layers in different ways is asking the questions: 'how the hell do I survive in this world? What do I need to do? How do I need to be?' It's only with the transition into Second Tier consciousness that fear drops away significantly so it's no longer a key driver anymore. It's interesting to look at people who are trying to make sense of things that are happening in the world and things that are happening within themselves and just to notice whether their perspective is being driven by fear or not. Of course, there are a whole bunch of theories out there which appear to be driven by fear around issues like government conspiracies and alien abductions and those sorts of things, and it's interesting to see different people talking about the same thing, but sometimes in the absence of fear, and they have a very, very different perspective.

There was one particular presentation over the last couple of days by someone who'd had an alien abductee experience, and he made a very good presentation but he was talking about the experience of interacting with extraterrestrials that he had—perceived to have had—and going through the process of having a massive heart opening experience, which he described as like an explosion of ecstasy in his body. But nevertheless, he presented it in a very, very fearful terms, as if it was something that he would rather not have had, which is really interesting, because if you take someone else who had the same experience, they might talk about it in a particularly different way. I

guess you've also got to acknowledge the bizarre nature of unexpectedly interacting with something that seems to be from another planet, so I think most people would be afraid when faced with that.

Nyck: Perhaps. Well, it's hard to know. On that topic, you may, folks, have heard of and read a little bit about "the comet", ‘Oumuamua, which I do believe is Hawaiian for 'messenger' and has been called a spaceship. For those who don't keep up with the space news: "‘Oumuamua is the first object in history to pass through the solar system, our solar system, and be identified as definitely originating outside of it. The first interstellar guest came to us from the direction of Vega, the brightest star in the Lyra constellation", which is 26 light years from us (https://en.wikipedia.org/wiki/’Oumuamua). The curious thing for me about this is that just the other week, and I've talked to Steve about this, I watched the 1997 film starring Jodie Foster called *Contact,* and in that film, it was from the star Vega that the message from aliens came. The film was predicated on that and the journey to that. I think it was a film quite ahead of its time in some ways, but there's quite a lot of serious scientific work looking at this, isn't there, including from *Harvard's* astronomy department?

Steve: That's right, this is a really interesting piece of news. The chairman of *Harvard University's* astronomy department and author of one of the most controversial articles in the realm of science last year, a chap called Avi Loeb has come out and said that he thinks that what appeared to be a large rock sailing through our solar system ['Oumuamua] actually seems to be some kind of technology rather than just a rock. That's based on a study of the physics of its movement through the solar system, and the key thing was that it didn't behave like a comet. Normally when things come from outside the solar system and go flying through, there's some kind of tail that they emit as a result of their interaction with the Sun, and this thing didn't have that; and strangely, it entered the solar system in an unusual way—what they called an extreme hyperbolic orbit—at a speed of 26.3 km/s relative to the motion of the Sun, and as it drifted past the Sun, it actually accelerated. I think that's the key thing—if it was just a rock or a comet flying through it ought not have done that.

Nyck: So you're saying basically it was using the Sun's gravitational pull to sling it back out to space again, perhaps.

Steve: Yes, so they're saying here that the Sun's gravity accelerated the object to velocity at 87.8 km/s, compared to 26.3 km/s as it entered into the solar system and so the implication is that it is some kind of technology that is designed to act as what they call 'a solar sail', in other words, to use the sun's energy to propel it.

What an amazing thing to have a man of this stature from the *Harvard University's* astronomy department come out and say that he thinks it's actually some kind of alien technology. That's pretty extraordinary.

Nyck: Absolutely. I mean, this guy, Professor Loeb, in 2012 was named by *Time* magazine as one of the 25 most influential people in the field of space so he's not just some out of nowhere kind of guy. You've probably seen a photograph of this—it's a rather unusual object. It's a long cigar-shaped object; probably if it had been stood up in Byron Bay it would have been called phallic, and perhaps it would be a better thing than the birds, actually.

Steve: It could look better, actually, if you stood it on its end, I think.

Nyck: Yeah, it would look better, but it's certainly an interesting object.

So there you go. It's fascinating to me, having just watched the movie *Contact* and if you haven't seen it, I suggest you have a look at it. It's a very interesting movie, *Contact*.

Steve: As you just alluded to, the object came to us from the direction of Vega, the brightest star in the Lyra constellation, and in fact, it reminds me also of the movie *K-PAX*.

Nyck: Oh, yes, *K-PAX*, with that guy who's in trouble now—Kevin Spacey.

Steve: He's been in a bit of strife. He played an alien visiting Earth who said he was from the Lyra constellation, so there you go.

Nyck: Interesting. Now, at the same time, this week, you might have seen another report of repeated radio signals coming from a galaxy 1.5 billion light years away (https://www.independent.co.uk/life-style/gadgets-and-tech/news/radio-signals-fast-radio-bursts-frbs-galaxy-signal-repeated-space-scientists-a8719886.html). They've repeatedly spotted these blasts of radio signals coming from deep space—and this is quite a breakthrough—fast radio bursts have been speculated to be the result of everything from exploding stars to transmissions from aliens but they've remained entirely mysterious. These flashes only last for a millisecond but they're flung out with the same amount of energy the Sun takes 12 months to produce. Quite extraordinary. So, of course, these regular bursts, and they're very brief, coming from out there in space could be anything, but again, this notion of 'well, we simply do not know

everything', we don't know what's going on and we don't know the source of such things. It's exciting.

Steve: It is exciting and it's a very interesting topic. A lot of people take the rational approach and say it's ridiculous to think that these things are the result of alien civilisations, but if you look at the mathematics of it, the probability, given the number of stars out there in our universe—at least the ones that we can see, there's probably a whole bunch that we can't even see—the probability of there not being another form of life out there is astronomical, no pun intended.

Nyck: Yes, it's pretty amazing and again, in the movie *Contact* that I just referred to before, there's a great scene where Jodie Foster's astrophysicist character comes back after it's been acknowledged worldwide that there's been an alien contact and they're going to build this device—this spaceship or whatever it is; they don't know what it's for—and she comes back to the facility and she drives through this crowd of crazy people. It's a great scene because it shows this inability of a large percentage of the population still, at this time in human history, to actually consider receiving something like this, something that alien. So you see all these religious fanatics saying it's hell and this is an evil thing; and you see all these people dressed up in alien space outfits welcoming the visitors from outer space; and you see all sorts of other crazies and people in fear, protesting or making an remonstrations to be saved and all that. Immediately, you see that we're just not ready for this sort of contact yet. Or are we? We're starting to see these moments scientifically, we're starting to see something like 'Oumuamua arrive in our solar system, some things we can't explain by our normal way of taking things, and yet most people are not seemingly ready for this kind of contact, I would say.

Steve: And again, it comes back to that fear—that fear of the 'other'. I mean, goodness me, we're still afraid of other people on the planet who have got different coloured skin or come from different countries, let alone beings from another world. As a species, we need to move beyond that fear a little bit more before we get many visitors, I think—at least open visitors who will show themselves.

Nyck: Open visitors, yes. I'm not too sure about you, anyway, for a start. I don't know where you're from.

Steve: I'm visiting? What do you mean?

Nyck: I'm not sure where I'm from to be honest with you.

Nyck: You are on *BayFM*, you are with *Future Sense* here with Steve and Nyck.

Steve: We had a quick report from a listener during the last break. As I was saying that it's inevitable there must be life out there, my microphone crackled apparently. Fast radio burst; another planet.

Nyck: Fantastic. They are listening to you, Steve. They're listening to us. They're watching us and they will make contact.

Steve: And I'm listening to them as well.

Nyck: I hope so. A couple of texts came in. We'll just address a couple of these. They are not totally on topic, but they'll lead us into something a little bit here: "Hi, guys, I've just read Charles Eisenstein's Climate: The New Story, and he talks of us moving from the myth of separation to that of inter-being." I kind of like that word: inter-being. Not bad. "I so want to believe humanity is moving forward", says this writer, "but with the pressures of environmental collapse so imminent, a fascist in Brazil cutting the Amazon down," that's certainly troubling, "both parties here in this country enamoured by fossil fuels still, and Trump doing his thing over there, it's hard to see us moving fast enough to avoid annihilation." That's actually from Jenni Cargill-Strong, who runs *Stories in the Pub*, and she says that on February the 10th, they've got a thing called *What Do You Stand For?* So you might be interested in that February 10th at the *Mullum Club*. She follows it up with another piece that says: "Re: democracy, science and decision-making. I participated in redesigning democracy workshops at Woodford and learned about the way citizens assemblies can be used extensively with well facilitated deliberative democracy to completely sidestep personality politics where politicians get wooed by donors. New Democracy worth checking out." Thanks for that, Jen, and certainly new forms of democracy do need to come online.

And on that note, there's an interesting report that we've come across called the Economist Intelligence Unit's Index of Democracy.

Steve: Actually, Nyck, I must jump in there because I noticed the one that we have been looking at is from 2007 so that's an old version, but there is a media article that we have which is talking about the most recent report.

Nyck: Yes, that's true. That's from a few days ago, 2019. It's entitled *The United States doesn't even make the top 20 on Global Democracy Index* (https://www.commondreams.org/news/2019/01/11/united-states-doesnt-even-make-top-20-global-democracy-index). I guess with reference to the text that just came in from Jenni and the future of democracy, we're still under the spell, you could say, of American-style democracy that most first world countries subscribe to in one form or another, which originated, of course, from Britain and other European countries, too.

Steve: But it's been run off the rails during the Scientific-Industrial era by something which we call 'corporate capture', whereby the democratic system has shifted to rely so much on corporate donations that the corporations have undue influence over the decision-making process, and consequently, as that has happened, politics has been less about serving the people and looking after the country, and more about serving particular interests.

Nyck: Yes, it's fascinating to see that the US doesn't even rate in the top 20 in this era. For some people who are looking at the Trump era who disagree with Trump's politics, clearly that's not unusual. Americans mostly don't vote, they're not particularly engaged, it would seem, in the democratic process, and that's witnessed by the fact that Australia is relatively high up on this particular scale; that the countries at the top of the scale, you can imagine are some Scandinavian countries and the like, but this notion that we are a full democracy certainly eludes us. I would suggest we're probably, in this country, slipping away. The good thing about this country is we're supposed to all vote, which is good. We are supposed to find ways to be engaged, although I don't think we're educated very much on the process itself when we're young enough. We're not educated on our constitution. Do we have one, in fact? We don't have a Bill of Rights, of course, so arguably, certainly our treatment of others in this era would put a very big question mark about how democratic we truly are.

Steve: There's a whole bunch of things that need to change about our democratic systems, one of them being the fact that people are generally elected on the basis of belonging to a particular party or just being popular or maybe just having a good looking photo on their poster.

Nyck: Yes, belonging to a particular elite.

Steve: Yes, but we need to move to a point where we're actually electing people on the basis of their qualifications and experience for serving a government to start with, and also we need some kinds of mechanisms that allow the general public to have some influence in the decision-making process in the short-term. We get to have some input

when the elections come around, which is once every four years or so, but in between, if there's a particularly strong issue, the only possibility that we have of influencing that is influence in the media and lobbying with advertisements in the media to try and shift public support, which hopefully then would shift the politicians, but it's a very clumsy system. So I can see in the future us moving to some kind of a process where we can have more public input to short-term decision-making.

Nyck: Well, of course, even parliaments in our countries are now not the decision-makers, often. For example, in the United States, the escalation of the trade war with China, diplomatic engagement with North Korea, extensive deregulation of the energy, mining and automotive industries, have not required congressional approval. In other words, the President, Trump, can simply stick his signature to and stamp of approval on things and that's that.

Steve: Yes, that's right. Of course, there was that study by *Princeton University*, which I found a *BBC* article talking about, which was published in 2014—and they're saying it was a recent study so it must have come out about the same year—where *Princeton University* had a look at the US democratic system and basically decided that it's no longer a democracy and that it was basically an oligarchy. The first line of this article says: "The US is dominated by a rich and powerful elite" (https://www.bbc.com/news/blogs-echochambers-27074746) and I think that's becoming more and more obvious.

Nyck: One of the positives in this particular Democracy Index is that of the 60 indicators that make up the Democracy Index, women's political participation has improved more than any other single indicator in the model. Formal and informal barriers to women's political participation, including discriminatory laws and socioeconomic obstacles, are gradually being knocked down, so that's a positive, that's for sure.

Steve: It is a positive, and that was certainly the case with the recent US elections, where there was a record number of women elected, which is wonderful. It also reflects this values shift that we're seeing as we move beyond the Scientific-Industrial era towards this Humanistic, network-centric era. These layers of consciousness have particular themes, and as a very general rule, the individually-oriented layers like the Scientific-Industrial layer, for example, is masculine in its flavour, whereas the communal layers—each alternate layer is either individual or communal—you have a feminine theme, and so we're shifting back towards community now, back towards feminine influence, and we would expect to see this kind of thing. It's wonderful to be seeing it. It's a sign of progress.

Nyck: In terms of new democracy—and just referencing back to Jen Cargill-Strong's comment about workshops in Woodford, and of course, there's been many of these participatory community democracy movements going on and ideas around electronic voting, such as the *Flux* in Australia, which is still in existence, and others looking at ways for more participatory democracy—how do you see the future in terms of how we elect our representatives, or will there not be representatives in the same way anymore? How do you see that coming forward?

Steve: It depends how far into the future you want to go. To look at what's emerging right now, we're seeing blockchain-based technology that allows input, and that one that you just mentioned is an example of that whereby people can use technology to vote on issues and those sorts of things and have it recorded in a secure way that can't be tampered with through blockchain-type technology.

We're very fortunate here in Australia. Sometimes it's easy to overlook the fact that we're really still a fairly solid democracy compared to some other countries like the US, for example, and we have organisations like *GetUp!* which is a very grassroots organisation that does exist just to represent the grassroots opinion and uses crowd power to fund lobbying advertisements and those sorts of things, and I think it's very, very healthy that we've got those mechanisms.

Nyck: Yes. We talk a lot on this show about distributed and decentralised systems emerging on the planet and you mentioned blockchain there before and other systems that are emerging, and it is, in a sense, the buzz concept in the world, in the leading edge of science and technology and the like. How does this apply, do you think? How do you see that coming forward into politics—the decentralisation of democracy, if you will?

Steve: Well, some of the big themes that we're seeing with the emergence of this new set of values, this new layer of consciousness, are the relocalisation of a whole bunch of things. Technology is going to feed into that with things like 3D printing, for example, which will mean that we can go back to local manufacturing very, very easily and actually a lot more cheaply than the way we manufacture things at the moment. For example, something might be made in China and then shipped all the way to the supermarket or the store here in Australia where you buy it, whereas in the future those sorts of things can simply be ordered and printed locally using 3D printing. So if you extend that general theme of relocalisation and the importance of trusted local suppliers and local networks, I can see the responsibility for many government functions shifting back to local areas in the same way, where at the moment government has been centralised and the obvious issue with that is that everyone's complaining that these people in Canberra or these people in Sydney or wherever their local government is headquartered don't understand what's happening here on the

ground, right? And so that's an issue, I think, that is going to shift, and we'll see much more local influence and much more local responsibility than we have.

Nyck: Indeed.

Nyck: Yeah, don't you love radio? We love radio, and you can listen to us any time. You don't have to be tuned in right now because you're probably not. Maybe you're listening to us six months from now on our podcast, which you can go to via *Future Sense* on *iTunes* or on *Spotify*—both are free, of course—and you can also tweet to us at @futuresenseshow. We also have a website, www.futuresense.it and we will post many of the articles that we refer to there.

We're going to just tackle a bit of a tough topic, likely, at the end here.

Steve: Jellyfish.

Nyck: Jellyfish, and particularly the relationship, if there is one, between genes and complexity.

Steve: That's not Nyck Jeanes we're talking about, but genes.

Nyck: Yes, thank you. Now, you'd be pretty familiar with organisations like *23andMe*. Gene testing has become a bit of a trend these days, even at birth for educational intervention, embryo selection for desired traits, identifying which classes or races are fitter than others, and clever marketising now sees millions of people scampering to learn their genetic horoscopes in DNA testing kits. There's a lot of articles and even books about determining your child's success and all of these sort of things, but the problem is that "many of these headlines are not discussing real genes at all, but a crude statistical model of them involving dozens of unlikely assumptions" (https://nautil.us/issue/68/context/its-the-end-of-the-gene-as-we-know-it). Is science going a little bit ideological again, perhaps? "Now, slowly but surely, that whole conceptual model of the gene is being challenged", and as Steve mentioned, jellyfish are a little bit a part of this because there is this sort of overarching theme in the story of evolution, at least over the last half billion years or so, of rising complexity, and that complexity is actually somehow based in our genes and the expansion or the evolution of genes. But this is now being contested.

In terms of the jellyfish, there's a recent study appearing in *Nature, Ecology and Evolution* showing it "not to be the case—at least for jellyfish, humble organisms that evolved at a crucial juncture in animal history. They did not need more genes or even notably different ones to power their giant leap in complexity. This new study adds to a growing body of work that casts doubt on finding straightforward genomic signatures of the evolution of complexity." Hmm, complex equation. It's interesting, indeed.

Steve: It is interesting. Basically the discovery is around looking at genes and the older idea that the influence that our genes have on us, and how we evolve and how we behave, is directly related to their encoding of proteins and direct action. But in fact, the new research is showing that there is a complex network of operation within our DNA where certain genes are turned on and off in sequences and it's the combination of the switching which creates complexity rather than simply the number of genes that we have there. Again, it links back to this emerging consciousness, which is network-centric, and I just find it so fascinating how all of this new science that's coming out is really about the emergence of network-based thinking, which is really systems thinking. We're starting to look at systems and how the different parts of the system interact in different ways, rather than in a more linear and superficial manner as we have in the past.

Nyck: Yes, and as I've said on this show before, in my view, this sort of addiction to direct linear causality is something that's passing away because in a complex system, in a network system, it's not that one thing causes one other thing in that linear way at all.

Steve: No, when everything's connected in a network sense, it's not linear anymore. It's quite complex.

Nyck: Interesting, too, that these DNA components, which can vary from person to person, are called single nucleotide polymorphisms or SNPs. "The genetic search for our human definition boiled down in past research to looking for statistical associations between such variations and differences in IQ, education, disease, or whatever" (https://nautil.us/issue/68/context/its-the-end-of-the-gene-as-we-know-it). Again, that sort of very direct causative thing: if this, then that. The problem is that for years, disappointment has followed because only a few extremely weak associations between SNPs, single nucleotide polymorphisms, and observable human characteristics could be found. So it's sort of disappearing out of science anyway because it doesn't work.

Steve: That's right, and we've probably all heard people talk about a particular gene being associated with the potential of having a disease, but not everybody who has the gene gets the disease. It depends on the activation process.

Nyck: Exactly. It's a very interesting one. One of these articles says "there is no correlation between the complexity of living things and the number of genes they have." Also interesting because there's also this idea that we have an extra gene that's missing, isn't there? Or an extra DNA molecule? I think there's an extra thing on a strand. I know we weren't going to talk about this directly, but it just popped into my mind—a sort of secret alien component that's been activated.

Steve: You've caught me off guard, too, because I wasn't prepared to talk about this either.

Nyck: You know what I'm talking about, though.

Steve: Yes, I'm going to have to fish it out of my memory now. It's to do with, is it the number of chromosomes?

Nyck: It's the chromosomes. There's 23 and there's supposed to be 24.

Steve: All of our supposed predecessors in the evolutionary tree have 24 and we have 23, and one of those 23 appears to be two that had been fused together. That's the tricky thing, so it looks it looks like there's been some kind of strange genetic intervention there, which some people explain as extraterrestrial influence, which kind of fits with the out there theme of today's show, doesn't it?

Nyck: It does indeed. And there's a lot of out there things going on at the moment. What else can we talk about? We've got a few more minutes left. Anything else about the genes? Of course, it's science, and it's tricky science, and we certainly don't claim to be scientists or to be totally across it, but in this show, we like to bring you these things if you haven't heard them so that you can do further investigation. I noticed reading stuff about DNA and complexity in genes, how I've also, to some degree, adopted the language of 'oh, it's in my DNA' or 'maybe I can change my DNA if I do this'.

Steve: It's become common, hasn't it?

Nyck: It has become a very common part of our more open discourses between those of us who are interested in consciousness and interested in evolution and so forth, and yet it may be based on a bunch of falsehoods, again. And again, we see science somehow taking hold of something, running with it for a period of time—in this case for

many years in one form or the other—and it actually may not be true. And we've got a number of examples of these.

Steve: That's right. It's also a wonderful example as well of how science changes, how it evolves as we discover more stuff and we look more deeply and we look at things in different ways, and particularly when we go through these shifts in consciousness, as we're experiencing right at the moment. We're moving from what Clare Graves called a multiplistic way of viewing things in the Scientific-Industrial paradigm, which really was looking at things from a central standpoint, but looking at multiple options and experimenting and testing with different options—and that was really the basis of what we call mainstream science now—and we're shifting into a network-centric, humanistic, relativistic form of being human, which is giving us the capacity to really understand and be able to take different perspectives from within a network-type scenario. Sometimes we call it 'the wisdom of the moccasins', where you can really get a sense of what it's like to stand in someone else's shoes and look at something from a completely different perspective. Whereas in the Scientific-Industrial paradigm, we were always looking from the same perspective, but looking out at multiple options and possible courses of action, now we have this conceptual capacity to reposition ourselves and look back from different angles. So we're exploring the world and we're redesigning our values, reassessing our values, with this capacity to really put ourselves in the shoes of another person or sometimes even in the shoes of an animal, or nature itself, and imagine what it must be like to be experiencing certain things.

Nyck: Yes. It occurs to me, as you're speaking there, that faced with the many challenges that we now have on this planet, and for the first time in our history in this era able to see those challenges on a global level—and the obvious ones are there, we have climate change of one sort or the other going on on the planet, we have big issues around social issues such as the movement of people and refugees and the nature of borders as a good one, I think (what are borders?)—all of these issues are pushing many people back into this place of fear to some degree or other. It's very easy to be overwhelmed, it's very easy to be confused, by the weight of, the depth of, the issues that we face. And yet somehow, I'd encourage people to see this exciting element coming forward in our future. And, yes, that's not to ignore any of the challenges. They're significant, they are deadly, we may lose ourselves on this planet—that is a possibility—and yet somehow or other, all these things we talk about on this show are showing us the potential for an evolutionary change, a leap beyond, and the solving of problems and challenges that we have that we may not be aware of. As Einstein said, as well, "we cannot solve the problems with the same thinking that created those problems" full stop.

Steve: I agree, Nyck, but not just with regard to the potential, though. The fact is that this shift is already underway and we have research-based evidence to show that human thinking is changing. Our consciousness is shifting to operate in more complex ways, which is taking us into this network-centric way of being. It's interesting to look at how the technology that was developed during and as a result of the Modern Scientific-Industrial era connected us together, and it was that connective technology which really provided the fuel to start thinking about being immersed in a network, because we literally were immersed in electronic networks courtesy of the Internet, and that has shifted our thinking. It's helped drive the emergence of this capacity that we have that allows us to put ourselves in another place in the network and imagine what it must be like, and we can do that because we can literally reach out to people in other places around the world and we can listen to their experiences and get a direct sense of their perspective. So that is the engine of evolution, is the extra complexity that we create in whatever paradigm we're living in, which ultimately drives the changes in the plasticity of our consciousness that bring us to more complex ways of comprehending, and we have to do that because the challenges and problems that emerge out of the more complex life conditions mean that ...

Nyck: ... by their nature they're more complex.

Steve: Exactly. And as you said before, we can't solve them with the old thinking that produced them, we have to start thinking in new ways. And that's not a rational choice, it's actually an evolutionary dynamic.

Nyck: And it's great and ironic that this connected world that we now live in has given us the opportunity to see the challenges more clearly, to see that they're global challenges, to experience them, to talk about them to people on the other side of the world, so to speak.

Steve: That's right, and with the benefit of Clare Graves's work also, we know that the fear that we're seeing arise at the moment is a normal part of how human consciousness is changing, because Clare Graves mapped that. He said that as we move into this Relativistic network-centric era, we will try and solve our complex problems by moving resources around, because our conceptual framework now has shifted to a network- or systems-type framework, but it's still flat. So we're still thinking of reality—the world—as like a chessboard where we're moving pieces around and we have to shift pieces around within the networks in order to try and solve these complex problems.

Nyck: It's like the trade war that Trump has created with China. It's a very narrow-minded, just moving the same pieces around.

Steve: It's one-dimensional. Graves's work even gives us information about the future in that it says that the further we progress into this way of trying to solve our problems by rearranging things within networks, it's actually going to create more tension. We know that this era that we're moving into, the sixth layer of consciousness, is going to be most likely the shortest lived era so far because each era has been shorter than the previous one, and part of the dynamic is that the chaos that's going to be created from this new attempt to try and take a network-based systems approach to fixing problems is actually going to create more tension, which is going to drive the big leap in consciousness into Second Tier, multidimensional, integrative kind of thinking, which by all indications, will allow us to solve some of the most difficult problems and challenges that we're facing globally right now. This gives me great hope that we're not actually heading to hell in a handbasket. A lot of this fear-driven imagination of what the future will be like, I think, is normal and part of human nature and it's to be expected, but it's only a partial truth. It's generally not taking into account the fact that things are changing and we are changing.

Nyck: Indeed. As the old new age adage has said, F.E.A.R. is False Evidence Appearing Real, and there's certainly some truth to that, too. I also want to encourage you folks—not to tell you what to do, because I don't know, I mean, we're all different and I certainly have got my own approach to this—but to be able to identify those places where you feel a little out of the normal expression of yourself, where you feel able to deal with paradox a bit more (because the world is full of paradoxes), when you feel a little bit more excited by the multidimensional, by the extraordinary, when you feel encouraged by your own and others creativity, when you get inspired by intuition, when you get inspired by synchronicity, when you see and value synchronicity beyond coincidence and the like, I think all of these are moments in a person's experience of life now which are offering you an opportunity to expand. Rather than shutting these things down, moving back to 'oh, it's only that, it's not that, I didn't see that, I don't believe in that, I don't want to do that', rather take it on and go, 'well, maybe this, maybe I can accept this, too, maybe I can have a look at this' and be open to receiving different ideas about the way things work.

Steve: And I think that's the most important thing at this time in history is just having an open mind, being open to exploration and open to the possibility that there's more to know rather than thinking that we know at all.

Nyck: Beautiful. Let's leave it there. That's Steve McDonald and myself, Nyck Jeanes. This is *Future Sense*. As we've said, tune in to us on our podcast, either on *iTunes* or on *Spotify*, or you can also listen to the whole show with music on the *BayFM* website (www.bayfm.org). You can go to those places for the edited versions, which arrive fairly soon afterwards—in a few days' time. You can check us out there and also on our

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