Dave Asprey: Today's guest is Nassim Haramein, who is the guy behind a documentary that just came out, called The Connected Universe, about his discoveries. A couple of years ago, he opened a lab called Torus where he's the executive director of research and development. I've wanted to interview Nassim for quite a while now because I've followed his research online and he's one of the most original thinkers I've come across.

He spent about 30 researching connections in physics, math, geometry, cosmology, quantum mechanics, biology, chemistry, and even going back to ancient civilizations and looking at some of the different things that they talk about, things even that are in the iconography that you might see carved around the planet that have to do with the actual nature of reality and even like, what happens in the womb. This guy has the ability to put together so many different ideas. On top of that, he was a pro skier. One of those rare human beings who's probably part alien as far as I can tell, but I absolutely love the way his mind works and this is an interview I want to do forever. That is the weirdest introduction I've ever done for the show, Nassim, but welcome.

Nassim Haramein: Thank you. It's great to be her. It's Torus Tech, is the lab I used to ...

Dave Asprey Oh, Torus Tech. It's not called Torus. Okay. Cool.

Nassim Haramein: Yeah, yeah.

Dave Asprey Torus Tech Lab. I got it. All right. Well, let's get into this. You've talked about stuff about the fundamental geometry of space that connects everyone, and you just flat out say every thing is connected, which sounds completely out there airy-fairy kind of land, but you are not airy-fairy, and that you can back this with hardcore physics and all. What does it mean when you say everything is connected?

Nassim Haramein: Well, it means that there is a relationship between things in which that is a non-linear relationship that things are connected at a distance and tangled its concept of quantum mechanics that Einstein called "Spooky Action at a Distance". It was discovered early on. It was predicted by quantum mechanics early on and then Einstein felt like it was probably incorrect, but eventually it was confirmed in laboratory. It was found that two particles can be connected at a distance and be instantaneously correlated. That means that if you change one particle over here, that's entangled with another one over there. The other one acts just like the one that you're acting up on. We've been able to entangle two particles. We've been able to entangle multiple ones and now, we've been able to entangle larger objects like diamonds where if you hit the diamond with

a laser over on this side of the lab, the diamond on the other side of the lab acts like it's being hit by the laser. It's instantaneous. It doesn't matter how far the objects are from each other. They are instantaneously act upon when you act on one or the other.

Dave Asprey: This breaks the speed of light because even though nothing is being transmitted, the action has no delay whatsoever, which is shocking and amazing.

Nassim Haramein: That's correct. It really says something very fundamental about space time. It was unclear until recently and it's becoming more and more clear. Meaning like the observation of the phenomenon was done in laboratory but there was no actual mechanics to describe how this is happening and now, we're starting to understand it. There's multiple theories out there that are starting to support what I've been saying all along, which is that the particles are connected to wormholes. There's micro wormholes, little teeny filaments that are very, very small, much smaller than an atom that connects particles together in a structural space. You can think of two particles being entangled but then you can think of particles are not entangled. If you say everything is connected, what about particles that are not entangled? Well, my equations, which make very important predictions that were confirmed in laboratory now showed that everything is entangled. All the protons are entangled. All the electrons are entangled.

It's just that we can only measure the entanglement when we have access to the two particles, the two ends of the wormhole, it should like. Of course, most particles could be entangled with particles that are on the other side of the universe to a wormhole network, and we wouldn't know. Meaning when we move this particle over here, we don't realize there's another one on the other side of the universe that's moving that's entangled with it. We think that there are some particles that are entangled and some that are not, when in fact, they are all entangled and when we consider particles that way, when we do the mathematics I did to basically figure out what is the influence of all the other particles on one particle, we find very fundamental values, like there are size of the particle, the mass of the particle, the forces the particle applies on other particles. On it, it's extremely precise. It has been confirmed by laboratory, so it's pretty exciting.

Dave Asprey: Now, even the existence of wormholes is something that ... It's certainly, if you watch Star Trek or read science fiction, we all want there to be wormholes. Do we have proof that such a thing exist?

Nassim Haramein: Well, we don't directly ... They are part of the consequences of Einstein field equations. Einstein field equations are confirmed by many, many, many, many different experimental results and observation. If it is a consequence of Einstein field equation and we've confirmed those equations, then there's a good chance that they exist. Now, as I was saying though, we're starting to discover that

particles are entangled by micro wormhole and that might be actually the closest thing we have to confirming the existence of wormholes.

Dave Asprey: You've done some math and I think published a new equation, some new theories that hint at the existence of these wormholes based on observable things but so far, we don't know how to measure a wormhole but you've moved us a step closer to at least a plausible, scientifically backed theory that these things exist.

Nassim Haramein: Yeas. As well, it leads to an engineering path on how to be able to open the mouth of the wormhole, which could be very, very interesting for space travel.

Dave Asprey: Now, this is why I love having you on here because we are already living in science fiction. If you, 25 years ago, read Snow Crash, we're ridiculously closer and closer to a lot of these, the cyber space and things like that.

Nassim Haramein: Right.

Dave Asprey: It's shocking because this is happening in our lifetime. Well, I'm not saying we're going to open wormholes to outer space in our lifetime but if you can make a microscopic one that leads to a path, this is ... Maybe it can be bigger.

Nassim Haramein: Well, I would tend to disagree with you. I think we're going to open wormholes in our lifetime. I think we're really, really close. Actually ...

Dave Asprey: A big one. It's like for space travel in our lifetime.

Nassim Haramein: Yeah. Space time.

Dave Asprey: Yes. You're making me happy. Okay.

Nassim Haramein: I think we're really close. There's large efforts from NASA to do. It's not just bleeding edge scientist like I, that are out there trying to do this. There's more and more interest from the mainstream. This again, it is not so esoteric. It is predicted by standard equations. It's just not being clear using standard equations how you would be able to open them, and that's where the more advanced physics that are being published now are starting to give us a path on how it's done because there's an energy that's present in the structural space time that was not accounted for in earlier equations.

Dave Asprey: I will disclose something I don't think I've talked about on the show before. One of my uncles was an early tech entrepreneur in the data center space and made a ton of money and went off and decided he would take his new found wealth and study the effect that made capacitors jump off of a high energy laser boards, and ended up coming up to something that was in the same field as you. You basically said, "This has to do with playing constants," and basically

there's energy that we're tapping into and he had mathematical proof that said, "Look, you can move things with propulsion using just the electricity."

Nassim Haramein: Wow. I'd love to do this work.

Dave Asprey Okay. I have it. I actually sent it to the guys working on SpaceX, believe it or not. Not Burt Rutan, the other guy doing the math. I'll think it with this, but I'll have [Wayde 00:10:41] send that to you because he passed unexpectedly 20 years ago. I was one of the early guys investing in private exploration in space before SpaceX [crosstalk 00:10:51] and all of that. This kind of stuff runs in my family. My grandma was a PhD in nuclear engineer. I'm not a physicist, I'm a not a quantum physicist. I'm a computer science guy, but I know that you're ... Every time I read your stuff, I'm like, "Wow." I know that there's meat on that bone that science hasn't necessarily, at least much of science hasn't gotten too. I also know we have a huge number of scientist and academics and a lot of medical people. What we're running into is that the quantum effects at the sub solo level at the mitochondrial thing, when you have a semi-conductive mitochondria,that's probably quantum integral.

All kinds of cool stuff going on. I want to talk about like going to space and wormholes, which is a cool thing I've ever heard of. Then, I want us to zoom in on this microscopic stuff and how that maybe affecting our consciousness. I know you look at these and very few people will go the whole spectrum there. Let's start in space and end up in interspace. Sound like a plan?

Nassim Haramein: Well, I think they are connected. That's the thing. If you take my equations for the radius of the proton, which is still to this day, the most precise prediction of the nuclei of an atom, the proton, nuclei and atom in history meaning the standard model is off by 4% according to the latest measurements. My results is within the margin of error of the experiment, which is with 10.00036 of the experiment. Just to give an idea of comparison, in some three decades of string theory with billions of dollars investors, thousands of physicist working on it, not one prediction came out of string theory, which is the competing theory for unification. My theory has produced many, many, many predictions but certainly that's the one. The radius, the proton is very important. In any case, when I made this equation, when I render this equation, which are remarkably simple.

The complexity I went to, to find the equation is ridiculous, but then the actual result is so simple as remarkable. When you actually render those equations, you are using the mass of all the other protons in the universe. That is you're using the mass of the universe in the equation to output the mass of one proton, which is ... Basically what it's saying is that all the information of all other things in the universe of present in one proton in one point in space, and the relationship of all that information enclosed in the volume of a proton, which would make the proton the mini black hole relative to the surface, the amount of information that's able to escape the proton gives the exact mass and radius of that proton and this equation is exactly correct. It's basically

saying that mass energy is really the transfer of information across the entangled network of space sci through these micro wormholes.

When I say the other world and the inner world are entangled, I really mean it. I don't mean it in completely esoteric way. I mean it in a physical way that is the proton, or the electron, the source of matter is literally the relationship between the outside and the inside making boundary.

Dave Asprey: There you go. That's probably the most effective way. Everything is connected, the protons and every one of your cells are a reflection of the mass of the entire universe itself.

Nassim Haramein: Yeah.

Dave Asprey: Pretty cool. That does dial us right in to the interspace thing. I got to ask, what's your educational background? Because you literally are doing real work on ancient civilizations and the stuff. They've said, "Oh, that looked somewhat like the work I'm doing." Then, you flip over. How did you get to have a brain like this?

Nassim Haramein: Well, I took a very strange path for the educational system. I was actually a high school drop out and I was involved in the ski industry for some 20 years. I became very proficient. I was one of the top 20 ski instructor in the Canada and the coach. I was very involved in the sport industry, but all in all, I was asking very fundamental question about the source of reality and the structure of space time, I was very interested and it was a hobby and I studied for a long period of time as a hobby. Then, some 30 years ago, I give up the ski industry or some 25 years ago, I give up the ski industry and I started to actually work full time in studying physics and mathematics and as you mentioned, ancient sensation because as I did my study, I kept on finding strange relationship between ancient symbols and some of the geometry of space that I was rendering in the physics I was writing.

I was able to study independently all through this time. A lot like many others that are known, some of them not as known, but one of them being Einstein and I did a fair day with another and I did the best I could in being able to access material using universities and libraries and talking to other physicist and so on. Then eventually, I studied enough that I was able to start to put the pieces together and because I wasn't confine to a certain doctoring, a certain set up thought, I didn't have the class duties. I didn't have to teach in universities or anything, so I was able to completely immerse myself and concentrate because working on the unification theory is very difficult and usually, physicists only do it when they're in their 70s or in 80s because it takes that long to study enough of the field to be able to start to put the pieces together.

Typically when you're studying physics, you study something very specific and very narrow and in order to unify the field, of course you have to study much

wider range of physics because you have to try to unify the pieces. I was able to do that from the start.

Dave Asprey: How has the traditional field of physics responded to your equations that actually are better predictive than the ones you've had before?

Nassim Haramein: They've been pretty positive, but it's been a long journey. I get a lot of critic out there but in general, the critics you see out there on the net, they're not physicist. They're bloggers that actually don't quite understand what I'm doing. You won't see out there like well established physicist criticizing my work that much because the math is the math is the math and it adds up. In fact, if you look on our website, you'll see physicist are praising my work. It's not obvious however, for the physics community to endorse my work. It's very difficult for me to publish as an independent. It's difficult for me to get appropriate siting from other physicist because the establishment is not so excited about my work. The institutions is more of their issue. Of course, the institutions are funded like large laboratory, accelerators and all of these are funded based on the standard model.

If all of a sudden, the standard model is no longer appropriate, it threatens their funding source and so on. It's been a long journey. For instance, I was invited to give talk on my work after I made the prediction of the proton radius that became confirm. Right away, I was invited to give a talk at the center, one of the largest accelerator. The director at the time canceled my talk promptly and so on. It's difficult. It's been a long journey. It's a battle. It's normal, we expect that. People in that, when they spend their whole life studying a certain way, they don't necessarily give it up overnight, but it's making its way and there's changes. Very fundamental changes that are occurring in the understanding of quantum mechanics and quantum physics that are really taking hold now like the Copenhagen interpretation is becoming less and less popular.

Dave Asprey: I don't think most people listening know the Copenhagen interpretation. Can you dumb that down for me? I don't know.

Nassim Haramein: [crosstalk 00:20:55] what you wanted to talk about as well is some of the things about consciousness, but at the foundation of modern quantum mechanics is an interpretation that was given to the double-slit experiment. The double-slit experiment is an experiment where you're suiting particles at a slit and there's a detector board behind it and you're looking at what the particle, the pattern that the particle makes on the board. There's this one slit that you see the particles hit the board behind it. You see dots on the board. If there's two slits however, it seems like you get an interferons pattern in the back on the board behind the slit. The adaptation for that was very esoteric at the time. It was not understood how the particle could somehow interfere with itself and produce an interferons pattern if you had two slit, and so this very esoteric approach was brought forward by a bunch of different physicists, mostly German ones.

Einstein didn't agree with this interpretation but he went with it eventually, but it was the idear that the particle could be a particle in a way at the same time and it could interfere with itself, but it could be in state of super precision that it could be going to both slit at the same time and interfere with itself and so on. Then, it was found that if you put an instrument to try to pinpoint exactly which slit the particle was going through, you got a third result again. Then, that's where the concept that the observer actually changed the result of the experiment and that all got extremely esoteric. Actually, all mechanical models of particle physics were abandoned at the time and it was reverted to conceptual math with statistical, basically conceptual physics without mechanics where it became the base of modern quantum theory.

I always disagreed with that. Einstein disagreed with it until the end of his life. He tried to find a better solution actually literally until the day he died. The day he died, he was working on those equation but he was not able to find a solution. One of the things that are becoming more and more prominent now is that there's a different interpretation that can be given and that is that when the particle is moving, it's not moving in the field three environment. It's moving in a field. It's called a quantum vacuum and in that field when you move a particle, it makes way. Of course, it's a particle and a wave at the same time just like a boat is a boat that on the ocean makes waves as it moves. Right? You can think of it that way, so that when you have one slit, the boat goes through.

When you have two slits, the boat goes through and the wave goes through the other and interferes with itself. All of a sudden, it becomes mechanical. Again, it's fluid dynamic. I came up with that independently not realizing and had been found by De Broglie a long time ago [inaudible 00:24:46], but eventually, laboratories tried to put silicone beads on silicone fluid and vibrate the fluid, then shoot the beads and they got all the same result as the double-slit experiments called the pilot wave theory. Pilot wave theory is gaining a lot of support now because there's experiments supporting in and you can get pretty well everything you find with the double-slit experiment using this approach.

Dave Asprey: One of the interpretations that you'll see in fields of consciousness and personal development, and a lot of people misuse in quantum if you're a quantum yoger at this story at this point, whatever that means, but one of the things about the observer effect is that a wave won't necessarily collapse into a particle without something observing it.

Nassim Haramein: That's right. Yeah. The current interpretation given by the spiritual community or the consciousness community about the Copenhagen interpretation is incorrect, meaning when the Copenhagen interpretation talks about the observer, they are not talking about a human being. They are talking about a measurement, and that measurement can be done by a computer with no human being around like it's not directly related to consciousness and that leap is done by people that don't quite understand the mathematics that are being involved in this computation and so, it's incorrect. That's why the mainstream doesn't look at it favorably in terms of implying that consciousness is involved

because it doesn't mean ... It does nothing in the equation that says anything about consciousness there. It just says that a measurement has to be made.

Dave Asprey: I've done a lot of work on the biological level looking at the smallest and first measurement device in the human body and came to the conclusion that it's through mitochondria. The ancient bacteria inside your cells because they are sensing the environment way before your eyes roll that signal up through a multi-tiered system inside the body. My interpretation of this, which is not math-based, it's consciousness-based is that you have pattern matching assistance throughout the body that are consistently trying to measure and make sense of the world around you and by the time you become aware of it, it's already been in there for some amount of time, some meaningful amount of time, 10,000 of a second or something like that.

What that means is that if you can change the way you train your system to look at reality, you can probably have a better awareness of it, but maybe you can even use some of these effects to just change the world around you just by being more aware of it and being less ... Looking for a disaster or maybe looking for abundance. You might actually find it and you might actually influence it. I can't prove you can influence. It just make sense given what I've seen. Do you buy that?

Nassim Haramein: Well, that's the thing is that this tendency to hold on to the Copenhagen interpretation to try to explain consciousness isn't appropriate, first of all, but as well what's not clear to people is that actually, the Copenhagen interpretation and [inaudible 00:28:31] your equations, which is typically described as the [inaudible 00:28:37] in your cat. The cat gets in the box and you don't know if it's alive or dead until you open the box, the quantum way form doesn't collapse into alive or a dead cat. Right? Well, what I'm saying here is that the universe is never confused about the state of the cat because it doesn't need a human to observe it. It's not because it's in the box that it's isolated from the rest of the universe.

For instance, what about the frame of reference of the flea that's on the cat? The flea will know if the cat's alive or dead. What about the microbes inside the box? This leads to what you're talking about, so imagine that that was the wrong adaptation, imagine it's pilot-wave theory, imagine the particle when it's moving, it's moving in a field but this is a field of information and this is actually how I wrote this equation. Quantum field theory predicts that space and time, space is not empty at the quantum level. It's full of information. It's full of energy and that is the source ... According to what I found, is the source of the material world. It's that energy organizing itself into particles. All of a sudden, imagine that when you go back to consciousness study, imagine that instead of you producing consciousness inside of you, imagine that you're like an antenna tapping into a field of information. Right? Now, you're now on the receiving like a radio set but you're sending like a transceiver.

You're sending information, you're receiving information. Now, you start to get a really good sense that yes, you can influence the field depending on what you're sending in is what you're going to get back because that's how you're tuning the antenna. You have beautiful antic radial sets behind you.

Dave Asprey They're there for a reason.

Nassim Haramein: Yeah, exactly. Those used to be tuned with a crystal oscillating and so, the crystal had to be tuned exactly at the right frequency and all of a sudden, you'd hear the music, right? The band is not in the box. The band is not playing in the box, the box is connecting to a field, an electromagnetic field radio waves that are interacting with the box and then you're getting the music out. Well, think about consciousness in the same way. All of a sudden ... I wrote my first papers in biophysics talking about this and they were published at Quantum Neurology Journal a year ago or so, so I'm pretty excited. It's my first papers in biophysics.

I used to only write papers in physics and we're talking about this possibility that your whole body with your brain being like the nervous system central of the antenna and then, your state of emotion, we don't put that in the paper but this is what's imply would be what tunes the antenna because we know that's the dial on the radio set because we know that when you change your state of emotion, it changes the chemical, it changes the bio rhythm, it changes everything, which is what's tuning the antenna to a frequency or to another one.

Dave Asprey That would also imply that you could increase the power and modify the structure of the antenna to work better.

Nassim Haramein: That's right. Exactly.

Dave Asprey That would be via hacking, a field that I wrote a definition of, which is when you make your cells work better, you are better able to experience the world around you and change it.

Nassim Haramein: Right. Yeah, absolutely.

Dave Asprey You find that? It's okay to say no, but I'm just checking with the guy who's done a lot deeper and more precise work than I have.

Nassim Haramein: Oh, I think that's very good. I call it vacuum engineering because you're engineering the structure of the Planck vacuum or the quantum vacuum, and I totally agree in you. Basically you can tune the antenna to a higher resolution of information or lower, right? It's like if you have the dial a little bit off on the radio, there's a lot of noise. If you nail the frequency, then you get lots of clarity. I think you're absolutely right and we'll have to do with your state of help, your state of emotion, the way you're interpreting the field around you. You're literally basically a machine interpreting the field and sending your

interpretation back to the field and the field is feeding you back the information in terms of your reality around you and the experiences that you have. You are engineering your reality as you're going along if all this is correct, and like I said, it's not just philosophy, at this point, it's very much founded on solid evidence that this is actually how atoms and all of realities produced.

Dave Asprey Do you believe therefore that consciousness is outside the body?

Nassim Haramein: No, because the quantum field structure is inside the body as well.

Dave Asprey It's both?

Nassim Haramein: The atoms are 99.9999999% space. When I'm talking about space or the structure of space or space time or the quantum vacuum, I'm talking about the inner space as much as the other space because you were basically made out of mostly space and the .0000001% that we call the material structure of our body or anything around us is actually just an electoral static field that defines boundaries in space. This is what led me to write these equations a little bit differently than the standard model. I realized that when we're talking about a particle, we're not talking about a little billiard ball. We're actually talking about a little boundary in the structure of space and it's just an electoral static bound.

That's why for instance, the radius of the proton is called the charge radius of the proton because all we can say about that particle is that there's a charge in that region of space, a high positive charge we call the proton, but we're not seeing a thing down there. We're just seeing a charge in that region of space. It's important for people to realize matter is not some solid thing, it's just a bunch of fields interacting in space.

Dave Asprey Are you concerned then about some of the things that we're doing with something as simple as Wifi, radios we've had for 100 years or thereabout several hundred in doing radio. There's other things that are creating new fields that don't exist or that didn't exist historically. Is that messing with things in a way that we haven't predicted or unaware?

Nassim Haramein: No. I think it does have an influence. I'm actually quite amazed of how resilient the body is. It's being exposed that much electromagnetic interference continuously during the day, so I think the state of health of some of the stuff we're doing is really counter indicative, but I think as well, the body has this incredible resilience, incredible capacity to overcome interference. Meaning, you have 100 trillion cell, which is a non-trivial number. There's between 100 and 1,000, billion, billion chemical change every second occurring in these 100 [inaudible 00:37:21] cells in order for them to cohere and keep doing what they're doing. There's millions and millions of cell divisions every second to replace all the cells that die.

It's this fairly powerful carnal engine that's burning [inaudible 00:37:40] 100 degree fahrenheit continuously throughout 24 hours a day throughout like 100 years lifetime. It's so remarkable, very dynamic, very energetic system. I think certainly earlier electromagnetic devices were more damageable than the later ones because we're able to go to higher frequency and lower energy level to get the job done, so it's not as bad. For instance, when radio sets, when the first cordless came out, there were 900 hertz, a 900 kilohertz and it was a bad wavelength relative to the size of the cranial cavity and so on. It had more chance to interact with biology and so on. Things actually improving at that level, I think it's getting better but now we have micro waves [inaudible 00:38:52] through our ear all the time with our cellphones and so on. That's why I always recommend using headphones or using speaker phone and keeping your cellphone away from your body. Definitely I'm sure it has some influence that's hard to quantify.

Dave Asprey It is hard to quantify. I found that ... Where I keep myself, and I don't keep it near my reproductive organs because there's good evidence for that, but where I keep it on my right thigh. I have 10% less bone density right where the phone is, so it's definitely have an effet and there's some biochemistry that explains that with calcium channels and things, but I always wondered just from a conscious level if we really are a collection of electrostatic fields and other types of fields, whether unconsciously inducing new perturbations in all those fields is really doing good things for our consciousness apart from our biology. I'm not saying yes or no. I just wonder and I was thinking you might have done some thinking of it as well.

Nassim Haramein: I have. I think as well, there is some more for genetic field that connects us.

Dave Asprey What's that? What's going to happen with that?

Nassim Haramein: This work that was done by Rupert Sheldrake that showed that we're not individualized, that actually we're participating in a field very similar to what I found, but he came to it from biology because that being is field. He is a professor in a university in England, and he came to the idear that all biological entities, all structures on the surface of the planet are interacting with this fundamental field that connects everything and that gathers information and that can be influenced. Some of the evidence for that field that had been supported by experiments that is some of the experiments where they are measuring the effect of human behavior or at least some behavior in biology that influence random generators, where they have random generators around the world, they're called eggs and they're connected to a network and all these data feeds back to Stanford at one point and they can see that when ... They noticed early on, first of all, that when there was a big [inaudible 00:41:45] at one point, a big fashion to have global meditations. I don't know if you remember those years.

Dave Asprey Yeah.

Nassim Haramein: Knowing that late 80s, early 90s and so on, like probably until about 2000, there was a lot of global meditation where you'd be [inaudible 00:42:08] and everybody would meditate at the same time. They noticed that the random generators would start to go non-random. They would start their output, non-trivial, non-random output relationships in the network. Then, the more dramatic data came when 9/11 occur where literally every hit of the planes on the tower showed very non-random result on the random generators around the world. Since then, they've done all their studies showing that a person sitting in front of a random generator computer can influence it and so on. Basically, we seem to be participating in this field I was describing earlier.

Dave Asprey Your work is helping to define that field more tightly?

Nassim Haramein: Correct.

Dave Asprey These are small examples of things that should not be possible if the traditional things that we believe are out there? We have this inherent bias as humans to say that cannot be given what I know, therefore it isn't even if you're staring at the data interface.

Nassim Haramein: Right. It's hard certainly for scientists to necessarily feel comfortable with this kind of data because it goes against so much of our senses that are fairly limited. We think you're there and I'm here, and there's no way we're connected in some way but at the end of the day, it seems like we all are ... Just because of entanglement at the quantum level and when you look at nature, you can definitely see that nature has very fundamental relationship dependencies and if it didn't, nothing would work. This is really the part that's missing in physics. If you want to get to the source of it, this is a part that's missing in physics. There's nothing in standard physics that can predict the human being. There's nothing in standard physics that can predict even a microbe. Forget a human being, or even just a mono silver structure is too complex to emerge out of the current physics we're written because they all are based on the concept that the universe is random and if the universe is random, the complexity of biology cannot emerge high. The probabilities are extremely low.

When I mean extreme, I mean extreme, 10 to the 8,896 from our calculations for even just the most simplest interaction to produce the first mono cellular structure. The probability of that happening is almost zero. It's got to be something different. The reason why scientist really don't want to go there is because then they start thinking, "Oh, this guy say God is doing something or there's some deity that's organizing the universe and all of these." I am not saying that. I'm just saying that there is feedback into a field of the information. That's all you need for our organization. As soon as you have feedback, then things can organize very, very rapidly. The math all start to make sense again. Otherwise, it doesn't.

Dave Asprey: You're proposing the existence ... Well, other people proposed, but you're supporting the existence of a field that supports feedback, which allows life to form and allows all these small things we keep noticing that appeared to be non-random and actually are non-random because of the existence of [crosstalk 00:46:18]?

Nassim Haramein: Right, exactly. There's no way on the random function that all of a sudden, on a hundred trillion cells arrange themselves into a human being and not only does it do it initially, it continues to do it every second and continues to do the right thing just by bumping into each other randomly, absolutely not. There's something much more advanced, much more complex going on and remarkably from feedback, you can get all that complexity very, very rapidly. Maybe people would like to know what I mean by feedback. Think of a fractal equation. The fractal equation is the equation where you have a simple set of rules that defines a very specific geometry and basically you take the answer and you feed it back to the equations called iteration and then, you do more and more iteration. Well, very rapidly if you've ever seen fractal graphics, very rapidly, you get very high level of complexity, very high level of order and with very few iterations.

Currently for instance in CGI when we do like animations in Hollywood with some of most advanced animators in the world, what do they use? They use these fractal equation to make natural objects. If they're trying to make a tree, they're trying to make water ripples, if they're trying to ... Whatever they're trying to animate that's natural, they use fractal equations to get that because they produce very similar structures that we see in nature. That just tells you something because those equations are feedback equation. A good example on how feedback can create order out of randomness very quickly is the example given by [Sir Doyle 00:48:30] about a Rubik's cube.

If you actually take a Rubik's cube and give it to a blind person, which is really a mean thing to do, and you asked them to order it and let's say they can move and move every second, you can calculate what are the probability of them ordering the cube random and the probability are staggering. Meaning, they're quadrillion in probability. If they're making a move every second, the probability of them ordering the cube randomly exceeds the time since the 13.7 billion years start of our universe by billions and billions and billions of years.

You're talking hundred billion years and more. The probability of them all of a sudden just ordering the cube randomly is very low and the Rubik's cube is much simpler than a human body, but if you tell that person just one little piece of binary feedback like, "Yes, you're getting closer," or, "No, you're getting further," every time they make a move within two and a half minutes, they will have the Rubik's cube order. That's just with like a yes or no every move if they're moving every second. That is remarkably different how fast you get order out of feedback compared to random functions.

Dave Asprey For people listening, I heard proposed that one of the simplest feedback systems in existence is called meditation for you, right? It's how am I doing right now noticing that and then putting it back into your own system, which is why meditation has gone over the last 20 years or something that only crazy hippies would do to something that the highest performing people on the planet do regularly and things like feedback on your heart rate. Heart rate variability, which is core bio hacking technology, neurofeedback, showing your brain what it's doing, feeding it back into the brain and allowing it to amplify what it's doing. Feedback is fundamental to life is what you're saying and fundamental to [crosstalk 00:50:53].

Nassim Haramein: It is. Yeah, reality as a whole. Basically the equations I wrote say that it is the universe feeding back on itself that produced the material world like the atoms, the protons, the electrons and I solve for the electrons for the whole table of elements using those equations as well. Actually, the whole thing is the universe learning about itself and you're part of it. You're like a universal all pro about their learning and feeding back to the universe your interpretation of the field. It's remarkable.

Dave Asprey It's also remarkable because we finally reached the age of artificial intelligence. I actually studied this on my undergrad degree. I have a concentration in the field called decision support systems. We weren't allowed to call it artificial intelligence because no one ever thought artificial intelligence would become real, but what we're doing with this neural network, you hear about the things that are powering Siri and powering Google, all it is, is basic stuff where they feedback the results of what they did back into the system, which is the same thing our peripheral cortex does in the brain. It's got six layers and each one feeds back on to the next layer. It's like feedback is built into our biology. It's built in to the world around us. It's built in to the smartest systems. It's built in to computer generated graphics, and one of the ways you perform better as a human being is becoming better at receiving feedback from yourself. We call that awareness at least in my view of the world that matches [crosstalk 00:52:23].

Nassim Haramein: Yeah, absolutely. You can think ... Okay. Now, let's go to a very advance view of space travel. Let's imagine that you're trying to calculate. This might sound really esoteric, but think about it. It's actually something you do every day like that your car for instance does for you every day, you calculate the velocity of the car from point A to point B or your hand leaving point A and going to point B, right? You might semi hand this point A at this time and arise at point B at this time. According to that period, the velocity of my hand must have been dah, dah, dah, dah, for that distance, but is this true? No, it's not. You've done an approximation of the movement of your hand in space based on isolating your frame of reference to your hand, meaning assuming that the universe frame of reference is yours, but the universe frame of reference is not yours. That is if you actually look at the universe frame of reference while your hand was moving from point A to point B, the earth is spinning.

You have to add that because your hand actually moved to space during that time. Then, you have to add the fact that the earth is spinning around the sun, and that the sun is going at 300 kilometers per second into the galaxy and the galaxy is spinning itself. Then inside the cluster, inside the super cluster, inside the universe, assuming our universe is in the multiverse, then that most likely is moving as well. Eventually, you get to your hand is moving at the speed of light. Then, what is your hand doing and what exactly is moving? Then, you start to realize maybe movement is actually not what we think, but it's quantized. Maybe actually movement is quantized in such a way that my hand leaves A by becoming the field, the whole and then collapsing back into my hand a little bit beside it because I changed the information in the field by intending to move my hand.

Then, it collapses again into the field then back to my hand a little bit beside it and beside it and be like frames of a movie when they're fast enough and they're moving fast enough, it looks smooth but it's actually quantized. Then, you would say, "Well, okay. At what speed as these frames occurring, it would be occurring at the Planck time," which is very, very, very fast. Right? But if you could tap into the Planck time, what I'm saying to you is if you tap in to that wormhole network at the Planck scale of that field, all of a sudden, you could say, "But I want my hand to start at B, but I don't want to transfer the information to the Planck particle just beside it. I want to start it to the Planck particle on the other side of the universe. Then, my hand would ... Instead of being redone just beside it, it would be redone on the other side of the universe, so that I could collapse my field over here of information. Then, uncollapse it on the other side of the universe."

Dave Asprey: If that sounds really weird for people listening, we've all seen the movie "Dune" or read the books. That's what the spice was all about, and there's a fascinating new book in neuroscience called "On Intelligence." I find some of the most interesting work with some of the people outside of the field, this is a book written by the guy who invented the Palm Pilot. This is the first handheld device before we had smart phones. I actually worked at the company that acquired when they were a tiny startup before the Palm Pilot became anything big, and the book's called "On Intelligence," but he argues very convincingly that the structure of the brain itself is where the way you move your hand or do anything else, is you predict the future and he describes it in neurological terms like inside brain structures.

As you predict the future, you move your hand into where it's going to be in the future in multiple steps using feedback from each layer of the body starting very low moving up into the brain. This stuff is fascinating. I'm not sure though if people are listening to this right away and they've been following it, what are the implications for what we could do to use this in our lives today?

Nassim Haramein: Well, I think certainly the implication is that we have to pay a lot more attention to what's going on inside of us, how we're interpreting? If we're transceivers, what are we sending for signals into the universe and what is the universe

feeding back to us in our lives? How we interpret the field is critical. Certainly on a day-to-day base spending a little time everyday like meditation or yoga or whatever to actually pay attention to what's going on internally to us, not just the external world but the internal, I think is critical. Of course, what I'm talking about has significant technological application. If this field of information is there, it's extremely dense. It's been measured now directly by multiple laboratories. We know it's there. If we are able to tap into it in terms of energy that could provide all the energy the world will ever need directly out of this structure of space time, for space travel as I was talking about, it can change everything.

Certainly, it could give us gravity control, the capacity to control gravity and so on. That will change dramatically people's life, their daily life but certainly, paying attention to what we think and how we feel and where we're at and what are we feeding the world, what are we feeding the field in every minute of our day? I think if we spend a little time even just five minutes every day just connecting and finding our center and then, moving from there during the day, I think that it can have a dramatic positive impact in our lives.

Dave Asprey: Very, very well said. If you walk around all day full of hate and smiling, it doesn't work because you're sending that into the world and I fundamentally believe that we're wired to be kind to each other and that what's going on in your heart and in your body and your mind at all times affects the world around you in a subtle way. It's not like you're going to catch on fire right now, but I've definitely made that part of my practice where I'm just not going to walk around thinking ill of other people even if I believe that they wronged me just because it's not a good thing. It doesn't feel good and if this information fields exist, which I believe it does and the math supports that it does, then don't crap in it. It's like you wouldn't poop in your water supply. When you're putting bad stuff out in the world around you, it is a [inaudible 01:00:44] pollution.

Nassim Haramein: Right. Really, our society as a whole has been doing that and now hopefully we're starting to learn that lesson that we can't pollute our own waters and destroy our trees and all of these and assume that we're going to survive it. Absolutely, it is critical that we are able to maintain. It's like this. If you're going to be walking around hating, the universe is going to respond to you with that level of intensity as well, that kind of energy. You're tuning in to that radio station and probably it's not the best music you want to be listening to and really at the beginning, it's almost just becoming aware that there is something in there that's constantly yapping. Then, what is it saying? Because we're not necessarily aware that this is happening inside of us. It's like we got accustomed to having this thing yapping inside of us. Well, people call it the mind. It's not necessarily saying nice things, it's not necessarily saying supportive things, constructive things about yourself.

People are so hard judging themselves so commonly and that leads to judging others and so on. Really, it has to do with becoming aware of the internal

dialogue that's going around that's going on. Basically the information that you're tapping into and then changing the radio station.

Dave Asprey: Very well described. That leads us right into another passion of yours, which is these ancient cultures and almost every ancient culture has some form of meditation, some form of mindfulness, lots of ... In some traditions like the Shamanic traditions, there is psychedelics. Other ones, meditating in caves and fasting and things like that. I've interviewed Graham Hancock who's done research on civilizations from before 10,000 years ago and things like that. What of your work or what of your work have you found replicated in the ancient technologies or ancient civilizations that you've looked at? Draw the connections that you've seen there.

Nassim Haramein: Okay. This might sound really wild for people, but I just spend, for instance, a month in Egypt going through the temples and the ancient, various structures that are found there and the evidence is staggering. I know that people won't believe this, but the evidence is staggering.

Dave Asprey: It is.

Nassim Haramein: That there was an advance civilization on our planet long prior to the dynastic Egypt, long prior to the [inaudible 01:03:59], and all the earlier civilization that left very advance knowledge and remains on our planet and in many places, things that cannot be reproduced today. I'm standing there at the Valley Temple right below the Giza Plateau right beside these things and you're looking at 200-ton blocks, 200-ton blocks. Those are non-trivial size. You're not that big beside a 200-ton block and they're stacked on top of each other and then, these were covered with granite blocks, pink granite from Aswan which comes from almost a thousand kilometer away. Perfectly, these granite slabs that covered these huge blocks were perfectly arranged so that even today, you can't put a razor blade between them.

In some cases, you can't barely see the joint between. It disappears. You have to zoom in with a camera to actually see where the two blocks join and the erosion on some of these blocks is remarkably high, very, very high and geologists are saying, "This cannot be dynastic Egypt. It had to predate dynastic Egypt by thousands and thousands of years." The earlier estimates, they go away to 80,000 years than the more conservative ones around 12,000 to 11,000 years but certainly prior to the last ice age to the melt down of the ice age and so on, and that's what Graham Hancock has found as well all around the world, not just in Egypt. You have statues in Egypt that weighs over 1,000 ton of granite, pink granite that was taken from a quarry across the Nile, hundreds of kilometers to where it was from.

We don't lift that today. We don't run around with it. We don't roll it around. Nothing like that happens in modern history and the things are carved perfectly. Then, people are going to say, "Well, why does it say Ramesses II on it?" Well, that's because it's well known that dynastic Egypt kings went around and put

their name on everything they found that was remarkable or beautiful, but certainly, no graphics and no [inaudible 01:07:00], no reliefs in ancient Egypt in any place, so them building pyramids or moving thousand ton blocks or anything like that, it's like they forgot to mention it? No, they didn't. They said that the sun god filled these things. You find that in Southern America, in Central America, all the Americanos society have these kind of remarkable things.

You find it in China now. You find it in many different places. What I'm saying is that ... Then, you look at the symbols that were left in some of these buildings and in these traditions that were conveyed from all these traditions into the present and the symbols are very much reminiscent of some of the physics we're finding at the very advanced level of either swing theory or even some of the new physics I'm talking about of the structure of space time. I think there is a message here that was left for us, and it's very important. It's encoded all around the world and I think it was a left for us by a very advanced civilization that no doubt, had means more advanced than our current modern means.

I know it sounds dramatic and irrational to say so, but what I'm saying is based on straight up data. It's got nothing to do with some archeologist interpretation, but actually what it takes to do what is found.

Dave Asprey It's fascinating that our ... Those voices in our head we talked about earlier. It's so easy in the field of physics, in the field of medicine, the fields of archeology to dismiss data that doesn't meet the model that you're trained to think with, but the real science is you find one thing that breaks your model. Your model is no longer perfectly accurate and it requires improvement. When you find these things that cannot be archeologically, medically, metaphysically, consciously, all you need is one that's provable and you know there's more beat on the bone that you got to dig deeper.

Nassim Haramein: Right.

Dave Asprey My read on you is that you're one of those guys who looks for the things that just don't match and says, "Well, that means you got to look more there." I have traveled to some of those sites myself. I haven't been to Egypt, but I've been in South America. I've been in remote parts of Tibet. I've been even in remote parts of Scotland at very ancient ruins, hundred thousand plus years old with melted stone that cannot be melted unless you have advanced technologies. Look, all of those, all I need is one of those that's inexplicable and you got to say, "Well, there's something we don't know," versus what we know is exactly complicated.

Nassim Haramein: [crosstalk 01:10:23] you only had one, but there's thousands and thousands of those examples all around the world.

Dave Asprey Exactly.

Nassim Haramein: At one point, you have to reconsider. Finally, archeologist, at least Egyptologists in Egypt are starting to reconsider and more of them now are starting to say, "Okay. This doesn't make sense. Dynastic Egypt probably didn't built most of these temples and the structures. They probably were there prior to dynastic Egypt. Then, dynastic Egypt playing them." They probably come from a more ancient source.

Dave Asprey What you're finding when you go to these sites is you're finding symbols that matches these physics.

Nassim Haramein: Well, symbols that match fundamental principles, the physics principles that are starting to become discovered and the philosophy are what we have, the remains philosophy of these theories that matches well what we're describing like the fact that everything is connected, the fact that there's a fundamental geometry at the source of creation that everything emerged from and returns to. All of these is starting to become more and more evident, self evident in physics and basically all of a sudden, something that's really ancient comes forward as like something that could be part of our future and it's literally like a back to the future kind of thing and it really, really says something deep about our industry and maybe even it says something deep about the existence of homo sapiens on this planet like in anthropology.

It really is unclear how homo sapiens emerged out of the natural order of things. You wouldn't expect that from a linear Darwin evolution that all of a sudden, a homo sapien would emerge with all of a sudden, a much smaller stature, much smaller frail, much less capacity to survive, but all of a sudden, double the size the brain almost and so on. There's unclear ... The so called missing link might be something we need to look at as well and so [inaudible 01:13:16] has deep implication.

Dave Asprey Now, I've got to ask you. Watson and Crick admitted they've had a dream and came out of it, and some of the great discoverers have gone back and used either advance meditation, breeding, psychedelics, [inaudible 01:13:31] altered states work like the very highest performing minds are in altered state because if it was an average state, they wouldn't be high performing. I actually trained altered states on myself and on others as a way to increase performance. Now, if you have the right altered states, otherwise they're pathological.

Nassim Haramein: Right.

Dave Asprey What's your practice for making your brain do what it does?

Nassim Haramein: I don't know. I think I was born like that, but well, certainly I was fortunate enough. I'm fortunate in one sense, unfortunate in one another. Meaning, my childhood was pretty difficult. I didn't fit in. I was really an outsider. I was very lonely and it was hard for me and as a result, my mother mostly, looked for ways to ... Find ways to make me feel okay, and one of those ways was to

involve me in learning to meditate. At the age of 11, I started to practice a meditation. I think it really had a deep impact on me and on being able to quiet my mind enough that I could capture a little better, the information in the field that I could ... Like became more clear in some ways.

I was tuning my antenna from early on and I think it had a large impact as well. When I was 11, I discovered rapidly that it became clear [inaudible 01:15:23] in the internal world and in external world because we tend to only think about the external world because that's what we interact with every day, but then I realized, "Wait, there's an internal world." Right? We can turn our senses inward. Then, I remember thinking this very early on. I started to think, "Maybe reality is the relationship of the internal world with the external world producing a standing wave that produced the reality we see around us." That was the start of this great adventure I've been on.

Certainly, I wasn't doing it to get a PhD or to get famous or to do anything like that. I was really just doing this by pure curiosity and wanting to understand reality. I think it played a big role in maybe the way that brain functions.

Dave Asprey Well, one of these days, if I get you in Seattle, I want to put 24 channel EEG on your brain and see what's going on there.

Nassim Haramein: Yeah, I'd love to.

Dave Asprey Okay. Well, we'll arrange that. I'm collecting brain wave patterns from very unusual and high performance people, so we can find the patterns and feed them into machine learning and actually tease out what are we doing to tune our antennas better, because there's so much more capacity in most people than [crosstalk 01:16:59]. All right. I'll connect with you afterwards.

Nassim Haramein: That's a great idea. I'll be happy to be connected for your experiment.

Dave Asprey Beautiful. It will take us a couple of hours to get a good signal and I'll tell you what we find too. [inaudible 01:17:12] and then they're wobbling around [inaudible 01:17:14]. Now, if someone came to you tomorrow, Nassim and said, "Look, I want to perform as a human being, like just at being human." What are the three most important piece of advice you would offer them just based on your life's path?

Nassim Haramein: Okay. I would say awareness is critical, so take the time to become aware of yourself like awareness. The studies that are just coming out now showing that when you move your body without thinking about it, not actually much neural pathways are occurring in your brain but when you actually move with intent, all of a sudden, massive neural pathways are ignited in your brain. Just having the awareness of what you're doing. Just realizing like the miracle you are in every second like, "Oh my God. It's an amazing thing that I'm able to move, I'm able to think, I'm able to be here." To feel that gratitude in every moment is critical.

Awareness, feeling of gratitude, appreciation for even a tough stop because if there is tough stop, that means there's learning occurring and if there's learning, there's growing and it's wonderful.

Then, certainly on the third one would be to dedicate everyday time to quiet down, be by yourself, be alone, be within and take that time even if it's just five minutes a day. Whatever modality you want to use. I'm not professing that some meditation are better than other, anything. Just anything that makes you turn your senses inward and find your center because from that place, if you're trying to improve your performance, that is where you want to be even if ... When I used to teach [inaudible 01:19:54], that was the most important part is like finding the state of equilibrium between all the alignments of your bones throughout the ark of return. Right?

That state of balance is in that center part of your being and if you can just find that every day even if it's for five minutes, then you can always go back to it if you start getting unstable during the day. You know it's there, but if you don't know where it is, then you're pretty well left to all the chatter that's going on inside of you.

Dave Asprey Then, you'll see [crosstalk 01:20:32].

Nassim Haramein: Exactly. Then, [inaudible 01:20:38].

Dave Asprey Now, you're doing some work with the Resonance Academy. Where can people find out what that is or maybe you can tell us what it is and where they can find out more information about the work you're doing?

Nassim Haramein: Okay. Well, the people can go to our website called resonance.is. That is resonance.is, so resonance.is is our main website, but there's the Resonance Academy that you can get to from our main website and then you can take a course, which is great. We have a six modular course that takes between 10 and 12 weeks for people to complete and it connects you to a community of people, thousands of people are taking it around the world, 80 countries are involved and as a result, every month for two hours, you get to be with me on Zoom meetings and we get to talk about things and answer questions and all the students are there and every year, the students that can come and meet physically in a beautiful place in the world and this is why I was in Egypt for a month last month. It was the first delegate gathering.

This is a course people can get involved in and it's great because you can study at your own pace, all the references are there. You can go as deep as you want or stay as light as you want. My kids did it. My friends' kids did it, and professional physicists have done it and it reaches everybody and it's really a great way to participate in a global community and connect with people all around the world as well.

Dave Asprey: Beautiful. Well, thanks for being an original thinker and thanks for coming on Bulletproof Radio. It's been a fascinating interview and I'm thankful for you.

Nassim Haramein: Thank you. I appreciate in having this opportunity to be on your show, and I look forward to the next time.