

The Great Simplification

Nate Hagens (00:00:02):

You're listening to The Great Simplification with Nate Hagens. That's me. On this show, we try to explore and simplify what's happening with energy, the economy, the environment in our society. Together with scientists, experts, and leaders, this show is about understanding the bird's-eye view of how everything fits together, where we go from here and what we can do about it as a society and as individuals.

Nate Hagens (00:00:33):

Today's guest is an international authority on depression, manic-depressive disease, and other issues around the human brain and our behavior. Dr. Peter Whybrow is a Professor of Biobehavioral Sciences at the David Geffen School of Medicine at UCLA. I've known Peter for almost 20 years, where he advised me on my PhD program. He had a big influence on my early putting together of the Superorganism Dynamics of Human Cultures from reading his bestselling book, American Mania.

Nate Hagens (00:01:06):

Today, Peter and I discuss his latest book, The Well-Tuned Brain. Starting with an overview of why human beings tend to consume excessively when living in a resource rich environment, why is it so difficult to change our ways and also pathways for us as individuals and hopefully as a culture to move towards having well-tuned brains. I hope you learn some things from my conversation with psychiatrist and author, Dr. Peter Whybrow.

Nate Hagens (00:01:47):

Hello, Dr. Whybrow. Good to see you again.

Peter Whybrow (00:01:50):

Thank you, sir. Always pleased to be with you.

Nate Hagens (00:01:53):

Where are you today? On the east coast or the west coast?

Peter Whybrow (00:01:56):

I'm on the east coast today, sitting in my ancient New Hampshire farmhouse.

Nate Hagens (00:02:03):

Excellent. So Peter, I know there are many neuroscientists who I've read their books; I know a few of them, but you are the only one I know who is a neuroscientist, but also deeply aware of energy, money, ecology, the environmental impact and the broader human predicament. So I expect our conversation could be longer than a one off podcast, but let me just start with this. How did you get interested in all this, not only the psychiatric observations, but the whole human situation?

Peter Whybrow (00:02:38):

Well, I've always been very interested in the way human beings work. I learned that in medical school from a fellow named Jaysed Young, who was a brilliant person in the early days of neuroscience. And also I had a very good teacher who was a psychoanalyst when I was there in London, in medical school. But the reason why I started writing these books most recently, because I wrote some usually technical books beforehand, was when I wrote the book that became extremely popular, which is called A Mood Apart, it's all about the nature of human emotional illness, particularly depression and mania, it was such a success that my agent at the time said, "Oh, you should write another book about the crazy stuff

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that's going on at the moment." And of course that crazy stuff was the .com bubble, which was just at the turn of the century here.

Peter Whybrow (00:03:37):

I thought about that and indeed there was a sort of maniacal thread to that, as you may remember. So I started to research it. I became interested in the way in which dopamine drives a lot of maniacal behavior, et cetera, et cetera. And I began to translate that back into the cultural experience that we were all having in America and beyond, of course.

Peter Whybrow (00:03:59):

That was how the book *American Mania* emerged, and that, in turn, was a success. And I thought, "Well, it's rather incomplete as a book because it doesn't talk about the way the brain works and how we might get out of being so maniacal." And so the third book was, and they really go together, the three of them, the third book was called *The Well-Tuned Brain*. That was an effort to take the events of 2008 where everything had melted down and to ask the question, how could we, by understanding the way the brain works, first of all, understand the events of 2008 and the rapid essential meltdown, which was to some degree, a worse form of what had happened in the 2000 period? And then, if we understood it, would it be something that we could actually mitigate? Could we change it through neuroscience, in behavioral neuroscience in particular, such that by understanding the way human beings develop, because we are not unique in that regard, we're mammals after all, then how could we perhaps avoid these sorts of catastrophes in the future that we've experienced in the past?

Peter Whybrow (00:05:20):

So that was the genesis of these three books, essentially, that continuum, which lasted over about a decade.

Nate Hagens (00:05:25):

Thank you. Let's take a little dive into the logic of that. It was the middle book that got me most interested in your work. That's how we met 15 years ago; *American Mania: When More is Not Enough*. So, in addition to running the Semel Institute for Neuroscience and Human Behavior, you have been a practicing psychiatrist. You diagnose and help the behavioral disorders on individual humans. On a cultural overlay, what is your diagnosis of our culture as a whole, from a neuroscience psychiatric perspective?

Peter Whybrow (00:06:02):

Well, of course I'm a migrant myself. I came to America when I was in my late 20s, very early 30s, and that has colored my interest in this. America is a very unique migrant society. Most of the people who've come here - probably 90% plus in fact, in the last couple of hundred years - their families are. So I think that if you put that in perspective, we brought with us the migrant genes. And as I describe in *American Mania*, your favorite neurohormone, dopamine, plays a large part in that. Because it's very clear evidence that the further migration has occurred, for example, those who've wandered all the way down to South America, they have a different allele, which means a different variation of the dopamine gene than do others who've come here and stay put. And that's also true of migration within the country itself. So the people who live on the coasts tend to be different from the people who live in the heartland, as we know, not only politically but also in terms of the way they think and what they do.

Peter Whybrow (00:07:18):

So if you put all that together, you then have a very interesting biological driver of something then is superposed by the culture of America, which is, after all, everybody who moves to America, not everybody, but pretty nearly everybody... I came here in the early 1970s. I'd been here as a student, but I came here in the early 1970s because I was working for the Medical Research Council in London. I was married, had two young children and I couldn't pay my bills. I was being offered all sorts of jobs at

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American universities to come over here and to apply my trade. And in fact, that was a good decision for me to make, but it was the migration.

Peter Whybrow (00:08:03):

Ireland, for example, there's lots of Irish people in America, but it's interesting to note that in the 1800s, when the Irish migration was particularly high, a lot of people stayed behind and died from starvation. Whereas in fact, those who came here lived a pretty terrible life to start with, but they eventually began to find success in terms of definition. Being that they survived, they thrived, et cetera, et cetera, et cetera. So the migrant gene has a very interesting element, both biologically, but also in the way it shapes culture. And American culture is in part shaped by the migrant gene. As you see right now, we won't give up our guns, for example.

Nate Hagens (00:08:47):

So this is jogging a memory of some different neuronal paths in my own brain. When I was writing my PhD thesis, help me out; is that migrant gene the DRD7 allele or something like that?

Peter Whybrow (00:09:01):

Yeah. That's right. Yeah.

Nate Hagens (00:09:01):

Oh, my gosh, I can't believe I remembered that.

Peter Whybrow (00:09:04):

Yeah, that's pretty impressive. Yes.

Nate Hagens (00:09:06):

Well, I got that from you somewhere 15 years ago or longer. Is that gene correlated with unexpected reward and the pursuit of novelty and excitement and all that-

Peter Whybrow (00:09:20):

That's correct, yeah.

Nate Hagens (00:09:21):

And so your thesis is that migrants to America predominantly had that allele. And when you combine that with in retrospect, a large bonanza of fossil sunlight, supporting vast riches relative to prior civilizations and generations, plus a culture that promoted bigger everything and excess and stimulation and short-term reward that is kind of combined to create a mania.

Peter Whybrow (00:09:53):

Yes. I mean, in a cultural sense, it's not literally psychiatric mania, but we can do this, we're going to get there, we're going to get there quickly, we're going to be the first on the moon, that sort of thing, which of course we have achieved. That particular American can-do stuff has turned us into the most individually profitable country in the world, probably. But on the other hand, it also is something that drives us without much reflection about where we're going. That's something that we are now facing. As Dennis Meadows showed 50 years ago, if you keep on doing what we were doing 50 years ago, you'd end up in a bit of a pickle because we would be bumping up against the resource opportunities of the globe we live on. And of course he has been proven to be correct, he and his colleagues, because that's exactly what's happening with our pollution of the oceans, et cetera, et cetera, et cetera. So all that became a continuum of interest.

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Peter Whybrow (00:10:58):

You and I became friends after we were both in the Post Carbon Institute. So what I'm thinking about now and why I'm so pleased to be talking to you again is that the story isn't over. I mean, we've overshot, but it's not over. And we have to think about what we can do now, knowing what we know about the behavioral neuroscience of how we behave. What can we do now to begin to think through in a constructive, in a reflective way, not in a reflexive way? Because most of what we do, as we've talked about on several occasions, is 80% of what we think about is actually reflexive. We learn that. That's how we ride a bicycle. That's how we can speak a language, et cetera, et cetera.

Peter Whybrow (00:11:51):

But the reflective part, which is what you have done so cleverly in the last few years to bring the subject to a public forum, and I'm not just aggrandizing you, I think that is something that has been a contribution, that is something which is reflective. But most of us don't reflect every day about what we're doing. That's why we have all sorts of problems in part, because we do most of it reflexive and the more technology we have, the more reflexive we become.

Nate Hagens (00:12:27):

So reflexive would be another word for, we do things on autopilot?

Peter Whybrow (00:12:31):

That's right. It's a habit that is on autopilot. So you can get up out of your chair and walk out of the room without even thinking what you're doing. You don't have to think I've got to put my left leg in front of my right leg, et cetera, et cetera, et cetera.

Nate Hagens (00:12:46):

And then our culture, especially with modern social media and all the smorgasbord of supernormal stimuli that's available to us, it actually interacts with our reflexive habits in a positive feedback way so that they get more reflexive, and a larger portion of our daily behaviors are reflexive as opposed to reflective?

Peter Whybrow (00:13:10):

Yes, basically, the reflexive part of our behavior is formed initially by reflective understanding. But once it becomes innate, and so that means what happens to you in the environment actually drives your reflexive behaviors. And if they are somewhat self-destructive, which they can be, then you thrive for a little while, but then you begin to go over the top and down the hill and into the ocean. You just collapse. And there are lots of people who unfortunately end up like that.

Nate Hagens (00:13:48):

So let me ask you a question, Peter, that I'm always curious and a little confounded by. I like to tell my students that we don't so much face an environmental problem or an energy or economic problem as much as a human brain mismatch from our ancestral environment to the modern environment. Why aren't more people recognizing the importance of the evolutionary influence on our brain's neuroscience as the pathway to describe both our predicament and kind of a way forward? Why is this not more commonly discussed?

Peter Whybrow (00:14:36):

I think partly because in fact, principally, because we are what you would call as an economist, short-term discounters. In other words, we do not think into the future very far. If we get what we want for supper, we don't really think about whether we should be planting grain for next year, not unless you're a farmer and have some sort of benefit from selling that grain the next year.

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Peter Whybrow (00:15:05):

So it's really the way the ancient brain, the brain that was put together over many, many, many millennia, which is superimposed in us by this cortex, which is extremely reflective and capable of very intelligent, interesting things to do. I mean, just think of it. There are no other animals on this planet as clever, if you will, as we are. But on the other hand, that in turn tends to trip us up because we don't look to the future. And we are doing things even now, which are to our own detriment, polluting the oceans. I mean, we can go on and on and on. But the important thing is that it's very difficult when you've built a society, which is built on short-term reward.

Peter Whybrow (00:15:55):

Adam Smith in the *Wealth of Nations*, he carefully said that, "This is going to be a self-correcting philosophy because we, on the one side visually having the natural biology which drives us, consumes what we need for our own self preservation. But the other side, we are," and this is where he got caught up in the early notion of balance economy, "we are sympathetic and empathic creatures and we don't overdo it." In other words, we care for each other and we worry if other people are not getting as much as we do.

Peter Whybrow (00:16:37):

And so he built this philosophical concept that the marketplace was a natural balance between the drives, the biological drives, and the social cultural concerns which human beings have. And that, of course, was what he wrote about in the *Wealth of Nations*.

Nate Hagens (00:16:59):

Let me pause you there, because I just had an insight. So when he wrote that in the *Wealth of Nations*, he was correct about the economic growth and the comparative advantage and growth and complexity function of the markets. But he might have been incorrect at the time about the social negative feedback loop to more consumption, because he was extrapolating how humans treated each other in a low consumption environment into the future. And now instead of having negative feedbacks to more consumption, we have these runaway positive feedbacks where, when I manage money for billionaires on my Wall Street job, they had \$500 million, and they said, "When I get to a billion, I'm going to quit," but when they got to a billion, their other buddies had more money and they kept going. They wanted more and more of these digital representations. Is that a fair assessment?

Peter Whybrow (00:17:52):

That's exactly right. Your experience and possibly why you left that particular scenario is exactly what has happened. He also wrote a book called *The Moral Sentiments*, as you know, Adam Smith. The fact is that he got the idea about the ability of the human being to constrain themselves as he thought. He was wrong, of course, but some people are able to do it, but he was very interested in the idea that you could have a balanced society.

Peter Whybrow (00:18:27):

You must remember, as I'm sure you do, that in the 1800s there was a big fight about whether or not the human being could control itself, because they were busy getting rid of the church and the idea that in the Western world anyway, that the church was in fact, the constraint upon human beings. But when it wasn't there, everybody said, "There's going to be a runaway massacre. Everybody's going to be doing crazy things." And Smith said, "No, no. we're basically moral creatures. And that balance is out the propensity we have for self-interest."

Peter Whybrow (00:19:06):

If you think of it as a scale, one of the sides of the scale is balancing the other. The problem is that now we've got so much piled onto the material side that we have completely accelerated the notion that we

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came to this particular quandary with initially through our biology, which is that we were starving, and so we would grasp as much as we possibly could.

Nate Hagens (00:19:33):

Right. Well, the audience of this is people that are mostly not starving. But I think most of the people listening to this are well aware that collapse is already happening. It's just not evenly distributed. If you think of Ukraine and Bangladesh and Syria and other places, for sure, not to mention other species.

Nate Hagens (00:19:53):

Two thoughts here. First of all, the correct title would've been in hindsight, The Theory of Moral Sentiments, *In the Absence of Large Exosomatic Surplus, or something like that.

Peter Whybrow (00:20:04):

That's right. That's right.

Nate Hagens (00:20:06):

And then to your question, one of the reasons I've thought about why it's so difficult for people to reduce consumption is the psychological concept of loss aversion. Which is, if you start with \$10,000 and you get a windfall of a thousand, they measure your neurochemical response of wellbeing and happiness and it's X, and then they take it away and go from 11,000 back to 10,000, and that experience is much more intense in a negative sense than the X was. The logic of this is that if we in our ancestral environment were in a period of abundant food and game, having a little bit more wouldn't have helped us or hurt us. It would've just been nice to have a little extra. But if we were in a period where there was hardly any, and then we were already on the edge, losing what we did have would've been fatal. So that response of holding on to gains and being reluctant to give things up in our consumption was conserved over evolutionary time. Yes?

Peter Whybrow (00:21:17):

We are victims of our own evolution, which for a period was absolutely essential. I mean, that's why we were just as smart during the ice age as we are now. There's a lot of evidence for that that we could talk about. But the fact is that it wasn't until the weather warmed up and we got out of the cave that we suddenly decided, my god, we know we could do a lot better than this. We could even start planting. Agriculture came along. In other words, our ability to live in depriving circumstance was the trigger to our success.

Peter Whybrow (00:21:54):

The problem is that nobody has thought through the end of that bell-shaped curve. Because now in populations like America, particularly, and also in the Western world in general, where we have considerable opportunity, and also in other rapidly developing countries like China, et cetera, et cetera, people become rapidly addicted to more. That was what the book American Mania was all about.

Peter Whybrow (00:22:23):

So what you end up with is a set of circumstances where the natural evolutionary proclivity, which got us out of the caves and into success 10,000 years ago, is now working against us. In fact, we are polluting the very planet on which we once had relied to increase our propensity for not only living well but also having lots and lots of kids.

Nate Hagens (00:22:53):

Let me break that down a little bit, or let me ask you a question and have you break it down. I think a lot of people, far more than our general choir paying attention to this, recognize that we're having an impact on nature and they're not happy about it. It bothers them. They don't know what to do about it.

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But that's a different part of the brain than getting home and having a six-pack of beer and a pizza and ordering some things on the internet and continuing, what you referred to as addictive behaviors.

Nate Hagens (00:23:27):

So from the perspective of a neuroscience, what does it mean to be addicted to more, question number one? Question number two is there is a poly-addict cross consumptive aspect to this that if you're addicted to cocaine or alcohol, the same neurochemical wiring makes you potentially addicted to slot machines or buying shoes or any other number of physical consumption things, can you explain that from a doctor standpoint?

Peter Whybrow (00:24:00):

Well, go back to what we were discussing just now, and that is that the brain's propensity is to find as much as it possibly can to support the organism ourselves. It doesn't differentiate between what's out there that is food, and what is out there in terms of addicting substances.

Nate Hagens (00:24:24):

That's what I was going to say is there's a difference between the proximate and the ultimate. The proximate is that we get some food. But the ultimate isn't really food. It's the brain seeking those same neurotransmitter sensations, the emotional states of our successful ancestors. And in many ways, in many cases, that's actually not food. It's some other consumptive behavior in the modern environment. Is that right?

Peter Whybrow (00:24:50):

The best way to think about it is to turn that upside down and to say in order to stay alive, we need a certain number of things, and that is why we were so successful. The human brain is not a single organ. It's got a whole system in there, which is extraordinarily curious, and self-interested, and we are constantly foraging and so on and so forth. All of which sustains us, keeps us alive. Look at the way we're curious about the world in general. We're physicists. We're biologists. We're just curious creatures.

Peter Whybrow (00:25:26):

The trouble is that we always had the environment to constrain us. When you were living in a cave and the world was subzero most of the time, you didn't worry too much about going outside. But now those things have been released. Not only is the temperature such that you don't have to live in a cave anymore, although we may have to soon if it gets any hotter, and the fact is that once you get out of that original shell, the behavior of the animal has no constraints. The only constraint we have is what you've mentioned several times, which is the intellectual ability to see that we are doing ourselves a great disservice.

Peter Whybrow (00:26:13):

Now that is not an easy trick for most people to do exactly when they are being faced with the fact that they should buy more, get more, do more, have more because that's what human beings are supposed to do, to continually consume. In our modern society, if you're not getting richer, as you were describing just now, and you are not making more money, look at the present circumstances. I mean, most people who have the luxury of having some money in the bank, well not in the bank, but in the stock market, suddenly find that it's worth 20% less than it was. They're all terrified. That's an example of how we don't know how to stop. We have no constraining variables.

Peter Whybrow (00:27:05):

Smith's idea was that the constraining variable was a social variable. But we don't have that anymore. We've taken that out of the culture. We don't have, especially in the modern capitalist society, and I have nothing against capitalism, it's brought us to a wonderful position in many ways, but we've got to

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learn how to constrain things. We're polluting the earth. We're polluting our bodies. Americans are now shorter than they were on average just two decades ago. And that's because they're not as healthy. We're doing ourselves in very slowly.

Nate Hagens (00:27:40):

I didn't know that. And maybe we'll come back to that. In your response, a couple things came up. You've mentioned several times that we have no constraints. I can think of three potential ways to constrain our consumption. One would be a change in the laws or the legislation or the pricing to make things that are either unhealthy for us or for the planet to be more expensive, and things that we're healthy to be less expensive. So that there would be a government sort of thing. Two, would be a culture like we're trying to compete for status and recognition with our peers. And if growing the best organic tomatoes is what got us status instead of building shopping centers and amassing digital wealth, that could also constrain our consumption. And then the third, it would be individual recognition of this dynamic and a self-reflection and a change.

Nate Hagens (00:28:41):

You mentioned earlier that most people are not able to self-constrain. I would put myself in that majority there. I've, in my life, been unable to self-constrain my consumption. When I was on Wall Street 20 years ago, I made \$400,000 a year, spent it all, Peter. I had nothing left at the end of the year. And then for a long time after that, I made hardly anything, 40 grand or 30 grand a year, spent all that. But I changed my behavior to be commensurate with my income.

Nate Hagens (00:29:11):

But anyways, given those-

Peter Whybrow (00:29:13):

Don't say, but anyway, because you've just put your finger on a very important point, which is as an individual, you are very smart. So you decided at some point when you were on Wall Street that that was not being what you wanted to be, and so you changed your behavior. That is a very unusual capacity of human beings. Most people do not have that capacity. They do not reflect, which is what you were doing, upon themselves and saying, this is insane. I'm not only hurting myself. I'm hurting the rest of the world as well. That is very unusual. In writing *American Mania*, that basically described the problem that you just described of when you were on Wall Street. *The Well-Tuned Brain* is an effort to answer the question that you posed. But you can't do it, unfortunately, in just asking somebody to constrain themselves. It doesn't work very well. You were able to do it.

Peter Whybrow (00:30:19):

The reason for *The Well-Tuned Brain* book, as opposed to the *Mania* book, is that they're complimentary. The first part of the book talks about how we got here. It's who do you think you are is essentially the first part of the book. The second part is what do you do? You see, you've got to come back. You hit it in the middle of your question there. You've got to look at the sociocultural aspects of what we do.

Peter Whybrow (00:30:44):

Now America is the exemplar, because we're several standard deviations out. Others are catching up with us, because it also ties into what they see we have achieved. And if you're interested in self-interest, then you've got to be like America. But the fact is that we know now that that's destructive. What you have to do is to start from the beginning.

Peter Whybrow (00:31:07):

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The second part of the book is all about the natural proclivity that we have for trust. That's how a young baby manages to survive in the world, otherwise they'd be dead. If you go through the progression and you look at... I have a little piece about my granddaughter in the book, which is she lives on a farm with her parents. It's a sheep farm, and so she knows all about the beginning of life because she has learned how to take care of little lambs who die in the cold if they don't get their mother immediately. So the progression is that sort of love, which we share with lots of other animals, by the way, evolves into trust, and then it evolves into empathy, caring for somebody. And then if the society is sensible, it builds that into the educational system that leads to self command, et cetera, et cetera, et cetera, et cetera. That is the way in which you build human beings, which are going to be self constraining.

Peter Whybrow (00:32:12):

Now it sounds complicated, but it isn't so complicated actually because human beings actually like to be with each other. And when they like to be with each other, they are able to shape their behavior based upon what others tell them is valuable. You have shaped a lot of people's behavior because you have discovered that this is something that people are beginning to realize rationally is important. So their natural proclivity, I keep using that word, because that is what it is. If you just leave the animal alone, it will run off and be self-interested and nothing else. But we are smart enough to know that is crazy. That's not going to work.

Peter Whybrow (00:33:01):

So we are beginning to shift our focus away from total self-interest. Even in this culture, we are beginning to shift. Slowly we are beginning to do things which enable us instead of throwing away all the plastic into the ocean or wherever it ends up, we're beginning to think maybe we could recycle that stuff. After all, if the oil runs out, we won't have any more plastic.

Peter Whybrow (00:33:27):

We are smart enough to figure it out, but we need people such as you putting together in your programs to be able to make that leadership. The leadership is away from that. The leadership at the moment is let's get more stuff, let's have a bigger economy, let's sell more, let's eat more. It's more, when more is not enough. We're realizing when more is not enough, is the important part of that sentence, not the more part.

Nate Hagens (00:34:00):

So it's akin to the famous experiment where rats were given cocaine and then they had food and they could choose one or the other, and they chose cocaine until they starved to death. Is that a metaphor?

Peter Whybrow (00:34:15):

Essentially, yes. All animals have it, but most animals are not smart enough to create for themselves an addictive society. I have in the back farm here, my daughter is a vet, and she has a whole bunch of prize Holsteins. Well, you can tell when they're hungry because they start bellowing, but they don't know how to build a society in their own little corral there, which will destroy them, which is what we're doing.

Nate Hagens (00:34:44):

Well, we're going to destroy them and us, probably.

Nate Hagens (00:34:48):

Let me unpack a little bit of what you said. So trust and love are the antidote to some of these things. But don't those things happen at a one-to-one or a one-to-three scale? And some of the problems we have with dopamine addiction, social media consumption, economic growth are at a macro nation or

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global scale? So is the antidote then to have lots of small examples of building the love, trust, cooperation up at a local level or how do you foresee that?

Peter Whybrow (00:35:22):

That's one possible route to sanity. Yes, that's right. If you just talk about America and you know it from the corporate side, as well as what you're doing now, we have to slowly stop the idea that continued economic growth is the only way out of our present circumstance. There are lots of things that we can do now that will enable us to manage our 8.5 billion people through improving technology. We can't delude ourselves. Just because we're able to build electric cars now more efficiently than we did, we have to ask ourselves what's going to happen to those electric cars when they decompose? What's all the stuff in them going to be doing? Are we going to bury it? I mean, it's like atomic energy. We have to be careful.

Peter Whybrow (00:36:15):

So we've got the intelligence to do it, but it's not going to be an easy task. And the antidote to that is what you said. It is that we can live a simpler life in many ways, by actually going back to some of our roots, which is we get most of our pleasures, many of us, from doing things which are actually not that expensive. I mean, when you go riding your bicycle with your dogs chasing you or vice versa, it's not very expensive, but you like it and you do it and you do it regularly. I know you do.

Nate Hagens (00:36:55):

Well, you're mixing two stories. I ride my bike a lot and hopefully the dogs are not chasing me because I go on country roads, and then I walk my dogs later. And you're right; I love doing both of those things.

Nate Hagens (00:37:08):

Let me ask you this then. How are habits formed and why is it so difficult to change a habit once it's formed, and how are habits changed?

Peter Whybrow (00:37:20):

Well, habits are essentially a very valuable way in which the brain reduces what it has to do. As a small child, you have to think about how you stand up and you walk. But once you've stood up enough times and you've walked a few things and you've learned how to balance your head and your body and so on and so forth, that is extremely efficient. So habits become efficient. You don't have to think about it anymore. That leaves space and thoughtfulness to do something else. That's how we evolve into being human beings that have enough bandwidth to do all sorts of new things.

Peter Whybrow (00:38:03):

So habits are very valuable. On the other hand, there's nothing that distinguishes a habit of learning to walk from what you were talking about earlier, which is the idea that you also can get addicted to food or cocaine or whatever, whatever, whatever, or for driving rapidly. So the habits, they have no particular preference. The brain will learn how to do something and will do it excessively. It's only the rational part of the brain that says, I don't want to do that because I can see further down the road and I don't want to cause myself harm, or I don't want to cause my children harm, or I don't want to cause my friend's harm, or I don't want to cause my culture harm. It gets bigger and bigger and bigger. And that's how you begin to build a society, which is more thoughtful about the future. It's extending the natural, there's that word again, proclivity of short-term discounting, which is what we are. You extend the short term to the long term and then things start to happen.

Peter Whybrow (00:39:16):

I hate to bring up some of the European countries, but if you look at their educational system, it's totally different from ours. Ours used to be very, very thoughtful and proactive after the Second World

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War. We had one of the best educational systems in the world. Now it's all focused entirely upon very short term. You're going to get this exam. You're going to get into this college. You're going to get a good job, et cetera, et cetera, et cetera.

Nate Hagens (00:39:44):

So I'm going to come back to education because I know that is a core part of the second half of your book, but let me get back to the prior question. So what's the difference between a habit and an addiction?

Peter Whybrow (00:39:56):

They're both preconscious. They're both something which you've learned to do. They usually have some reward attached to them. But the unfortunate thing about addiction, especially when you're talking about chemical addictions, like you were earlier, is that that grabs hold of the core biology of the brain, and that is very difficult to stop. Whereas in fact, if you're just educating yourself to ride your bicycle and you decide you don't want to ride your bicycle anymore, that's easy. But if you have educated your brain to give yourself, as you like to discuss it, a dose of dopamine every time you inject your arm with some cocaine or whatever, that is almost impossible to stop because it's at the very core of the way your brain works. You have no choice in there, which is why a lot of people die of overdoses because they, they don't know when to stop.

Peter Whybrow (00:40:57):

We don't die of overdosing riding a bike, unless we become completely stupid and rush around on mountains, which I've seen, by the way. But in general, we're sensible. But you've got to put the rational and the biological together in order to stop an addiction. Habit is not addiction, in other words.

Nate Hagens (00:41:17):

So, for the record, I have never injected or done any cocaine, but I have traded stock options. I have done that. So the difference then between an addiction and a habit is the intellectual discussion of realizing the negative externalities on something. That has a larger potential sway on a habit and has maybe less power against something as strong as an addiction?

Peter Whybrow (00:41:45):

Yeah, that's a very good summary.

Nate Hagens (00:41:46):

You were going to talk about education.

Peter Whybrow (00:41:49):

Before we do that, let's talk about choice because that's what you were touching on earlier. The brain is, if you think about it as a mechanical system, the information comes into the back of the brain and that's where your visual cortex is. That's where it moves forward. And all the decision making is at the front of the brain, in the frontal lobes here. We have much bigger frontal lobes than almost any other animal. In fact, definitely much bigger. That's why we're so clever at making distinguishing decisions.

Peter Whybrow (00:42:22):

When it comes to that point, this is called the perception-action cycle, and when it comes to the point of action, if we thought about it, we have choice. So as you just said, I can give up a habit if I think it's not good for me anymore. I used to ski a lot, but as I've gotten older, I have never broken anything, but I know that I endanger myself more. So I have reduced that habit with some sadness, but nonetheless, it's more sensible than blowing myself up on the mountain. So I think that you're able through choice to make these decisions as long as you remain in control of the habits that you have developed.

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Nate Hagens (00:43:08):

Well, Adam Smith was a great humanist, and he saw the empathy and the collaboration and the human spirit. Ultimately, I believe in that as well. I think there are always in every circumstance, one, two, 3% of the population that is kind of sociopathic, that disrupts things for others. And in a time of massive, 100 to one exosomatic surplus, the power-law function has given that fraction of humanity an out-sized voice in the direction of our culture.

Nate Hagens (00:43:43):

I don't believe that it always has to be that way. I'm still a hardworking optimist that hopes that education about our systemic predicament, especially the neuroscience and evolutionary psychology of who we are as a species is important to understand, because we have to know how the brain works with respect to others and with respect to our consumption and with respect to our habits and addiction in order to chart a path for ourselves and then act as an example for others, and then maybe there's some cultural levers that shift, is my thinking.

Peter Whybrow (00:44:24):

Absolutely. Now, we're in the circumstances where people like yourself and Dennis Meadows and others have been blowing the whistle and saying, not only have you got to change your habits, you got to fix some of the things that we've broken in the past four or five decades. We have only just begun to realize that what we have done to the world at large is really extraordinary and we've got to heal some of that, otherwise we're all going to go down the cliff as it collapses.

Nate Hagens (00:44:56):

All right, on the issue of habits and addictions. Again, to clarify your kind words before, yes, I realized my situation when I was a Wall Street broker and was not the best use of my time being alive at this time, and it was like I had to get out of there and do something meaningful. And so I read books on ecology and neuroscience, American Mania being one of the books I read when I started my PhD, and I changed my vocation. But I didn't change my consumptive behavior of liking deep-dish pizza and a six-pack of beer and whatever else has always been my 270 pound frame volition. But building on that, lots of people listening to this conversation want to change their behaviors, but find that they can't. So what are some practical steps towards breaking the cycle? Can you give us some free psychiatric advice, Dr. Whybrow?

Peter Whybrow (00:46:03):

It's not easy to do that because you see if you wait too long, the horse is bolted and the horse, once it gets out, is very difficult to corral and put back into the stable.

Nate Hagens (00:46:16):

So give us two bits of advice. Give us advice to someone where the horse is not yet bolted, and the advice to someone where the horses have already left the barn.

Peter Whybrow (00:46:26):

I will do that. But I also think that one of the most important things for the future, which you are very interested in, is beginning to think through as a society how do you support the progression of those things that we were talking about just now? How do you support the family and the opportunity for adults to care for the younger persons, such that they, in fact, don't develop the same habits?

Nate Hagens (00:46:57):

Well, so that's a core point, right? Because if we lived in a culture where our basic needs were taken care of, and if we got sick, we weren't worried that that would bankrupt us, that then we would have

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less proclivity, said without a British accent, to be able to deal with these addictions and habits and such. So that's a central underpinning.

Peter Whybrow (00:47:20):

Yes. It needs to be reinforced right from the very beginning. In other words, it's not really an issue for the individual alone. It's for a collective. As you are trying to build, that people will then begin to realize that if they work closely together, then the whole culture will be lifted up in terms of its ability to manage its life.

Peter Whybrow (00:47:48):

So the answer to your question in short order is that we have to think through these things together. One person by themselves wanting to change their own habits because they feel they are causing themselves harm, that's very important, but it has to be spread out into a collective, otherwise it doesn't work.

Nate Hagens (00:48:09):

Yeah. You're giving me the neuroscience allegory of what John Gowdy discussed as the macro overview of The Human Superorganism. He's an anthropologist, ecological economist, who said, "Nate, you don't really need to focus on the individual behaviors of steep discount rates and addiction and tribal and resource consumption because we are all victims of downward causation of the market system that doesn't look out for the needs of the individual, because its goal is maximizing surplus." What you're saying is that not only from an economic standpoint, but from an emotional, psychological, neuroscience standpoint, a lot of the problems that individuals face, psychiatry and addiction, and some of the things we've been discussing are because of the cultural context we find ourselves in not because of their individual choices.

Peter Whybrow (00:49:11):

Shifting the cultural focus could improve the capacity of the individual to manage their lives, basically, because that would be the case. I mean, if you don't kill children at the age of 10, they certainly have a much better chance of being better off at 25.

Nate Hagens (00:49:29):

Right, there's a truism there. Okay, so let me ask you this. Knowing what you do about human behavior and the brain, and being a cultural observer, writing books about the mania that we find ourselves in, what are ways that we can use our knowledge of the way that the human brain works in order to have these conversations more broadly about changing the culture? Do you have any insights into that?

Peter Whybrow (00:50:00):

There's an inherent fascination that everybody has in the way things work. I think if we were willing to change our curricula in the schools, for example, such that the kids were able to explore things that they had some particular interest in, you would find a shift.

Peter Whybrow (00:50:25):

There are many schools in the country that already do that, but it's not the general. You see, one of the problems for America is that we don't have a sort of a consistent agreement about what it is that we should be educating young people to learn. And we're very unusual in that regard. It's partly an issue of size and the fact that we have state systems rather than federal systems. But if you look at smaller countries, they have lots of ways in which the young children are actually not just learning arithmetic and writing in the schools, they're learning social behavior and the way in which they can care for themselves, because in the long run, the goal is to develop individuals who have sufficient self-esteem that they can manage their own lives. The way in which you dissect out the cultural norms is by looking

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at how you provide the cultural norms. And in providing a cultural norm, which then gives people a sense of self-worth and an opportunity in the future that they hadn't seen before, then all things begin to shift away.

Peter Whybrow (00:51:42):

So it's not just buying a shiny new car. It's getting a whole new way of thinking about the world that's around you, and how you can be more caring to those who you grow up with and live with. It sounds sort of hocus-pocus, but in fact, there are no quick fixes.

Nate Hagens (00:52:00):

That I believe. Can you give us an example either historically or contemporary a country in the world that does have a well-tuned education system that-

Peter Whybrow (00:52:11):

Yeah, look at Finland. Finland is amazing in that regard. The school kids, they don't go to school until they're seven. The most important thing that Finland does, which we don't do, is the competition is not in the classroom; the competition is becoming a teacher. To become a teacher is something very, very important in the culture. And so you really have got to be good to be a teacher. And then you get paid very, very well. You are given a lot of autonomy in how you take care of those kids, and you don't have to teach them all the same thing, et cetera, et cetera, et cetera. But they end up having a society, which is, I think, stronger in terms of individual ability and therefore in terms of individual freedom.

Nate Hagens (00:53:03):

So being a teacher in Finland is a high status vocation?

Peter Whybrow (00:53:06):

Very high status, yes.

Nate Hagens (00:53:08):

I didn't know that. I think that's wonderful.

Nate Hagens (00:53:11):

Any other examples of either Finland or the contrasting other education models versus America's? I will just say from a super organism macro energy system standpoint, I feel that our education system is in service of the super organism, just funneling people into the workforce to get a job, to increase GDP based on what sort of jobs are needed. There's no trying to make a holistic individual human as the result of the process.

Peter Whybrow (00:53:44):

That's right. When you think that we spend at least a decade usually longer at the most formative years of an individual's life being educated, yes, we really need to spend an enormous amount of effort on trying to figure out how that works better than it does at the moment. There are lots of countries that actually do spend more time on it and we could easily do that. It's not a lack of resources. We just don't really give it a great deal of attention because as you pointed out, people are to some degree just considered to be a cog in the wheel of the larger cultural norm of getting material function at its peak and everybody gaining because of the money that comes out of that. But as we know, some people make a great deal of money in America, and some people make less than a living wage. 50% of the population actually makes less than a living wage.

Nate Hagens (00:54:47):

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Let me ask you this. I highlighted before the distinction between constraints and how some of our consumption is akin to addiction, but a lot of it is related to Madison Avenue and marketing and seeing what is promoted and accepted and aspired to in our culture. This morning on my bike ride, I passed this trailer park where there's a lot of double-wide and I was just thinking about it. And then after that, about a half mile later, there was this A-frame dilapidated structure deep in the woods. There was some caves and a little hill behind it. No one's living there. It's all run down. It looked kind of cool, like a tree fort.

Nate Hagens (00:55:37):

It made me think, the people that were living in the double-wides. Some of them were out cleaning. The kids were running around. They were surrounded by 10 other families living in this, what our culture would condone, as a less optimal living circumstance. And then on the hill, on the way back to my house, there's these big 4,000 square foot houses with no activity other than maybe a gardener mowing the lawn. I constantly ask myself how much of our consumption as a culture is related to the social signals of those around us and on TV and in the movies, and how much of that is unnecessary? If we were really forced to, we could all live in double-wides or tents or little A-frames in the woods, as long as that was culturally accepted and we had our basic needs met, which is a roof over our heads, healthcare, healthy food and those things.

Nate Hagens (00:56:39):

What do you think about all that? How much of our consumption is because we're comparing ourselves to the Joneses or Kardashians?

Peter Whybrow (00:56:46):

Almost all of it. There are many, many studies that show that after a certain income, one's sense of life and of fulfillment in life does not go up. It doesn't go up with income. It tops out at about, I don't know, it used to be when the studies were done \$10,000. Let's say now it's \$40,000 or something. But it doesn't continue to go up. What you described about the people who are living in close community in that trailer park, I mean, we diminish the idea that it's a community by calling it a trailer park. I mean, that's just the way we are.

Peter Whybrow (00:57:25):

The same thing happened in the slums of London. One of the interesting things, there are some very interesting books written in the postwar period, there were lots of areas of London that were demolished after the Second World War. Some of them had been damaged, but not all of them. There was something of a protest. And in fact, they, in turn later, those buildings were demolished because what was learned sociologically was that the people who lived in those areas actually had a fantastic community among themselves, which was very distinct from other areas. They seemed to be poor, and they were in some regards materially, but they weren't poor in terms of the connections that they had with each other.

Peter Whybrow (00:58:10):

And so I think that again is a lesson. I mean, we're beginning to sound like a bunch of old socialists, but I think that it's nothing to do with socialism. It's how do you develop people who have a sense of self-worth and self-esteem? And you do that by other people. Very little of it is material.

Nate Hagens (00:58:29):

Yeah. You've hit on something that I've frequently said, and even more frequently think, is that when we talk about poor people or poverty, we really ought to add a clarifying phrase "material or monetary poverty", because a lot of times a monetarily poor community is very rich in social capital and relationships, whereas many materially, rich people are quite poor in social relationships and community. So I think we probably need a cultural rebranding of that whole concept because material

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poverty is going to widen and deepen into The Great Simplification in my view. But that doesn't mean that our social and human capital and our networks and relationships and meaning, and collaboration has to decline. That's kind of the whole deal, in my opinion.

Peter Whybrow (00:59:30):

Human beings are social animals, no doubt about it. And that's really what gives us both great success and also our subjective sense of self-worth. And so when you get to the point where you ask the question, what is an optimum environment in which to bring up young humans? It isn't poverty, and it isn't affluence. That's a bell-shaped curve. You find a lot of people who are extremely wealthy, who are very, very unhappy. I can tell you from my professional knowledge about that. And at the other end of the scale, you find poor people who are very unhappy and destructive to themselves and their families. But in that bell-shaped curve, the key to somebody having a good life is the attachments they have to each other, because that is the core of the human being is to be attached to others. And if you're not attached to others, life gets really very wretched.

Peter Whybrow (01:00:36):

And I contrast the perfect society, one was built actually in the 16th century, by a man who had this great vision. If you have a perfect society in terms of its buildings, you have perfect people. It doesn't work like that. Absolutely not. And so you end up with the necessity. If you're trying to build a country that is generative to the next generation, you need to think about ways in which the persons who are bringing up their next generation can love each other, build an educational program, be respectful of each other, have adequate material reimbursement, et cetera, et cetera. If you put all those things together, human beings flourish. We're very clever animals. It's just that we unfortunately have got ourselves into a backwater.

Nate Hagens (01:01:30):

Clever, but seldom wise.

Peter Whybrow (01:01:33):

Yes.

Nate Hagens (01:01:33):

So how could we from the current political situation in the US, either locally as a scalable model, let a million flowers bloom locally, or from a government policy standpoint, get closer to the things that you're discussing here? Any ideas?

Peter Whybrow (01:01:53):

Not in a global sense. I think that if you look at smaller communities, it's easier to figure out how things work well. It's when you get into very large urban areas, especially when the urban areas are not supportive of families and the income of the individuals is low, that's where you get the tragedy and the falling apart. It's not rocket science. It's a matter of enabling people to create an environment where they nurture their children in a way that makes them feel positive. But we have lots and lots of unfortunate families here who do not actually have the opportunity to do that because both parents are working or there's only one parent who's working and they've got too many kids to take care of, et cetera, et cetera, et cetera. Again, it's not rocket science. It's largely tied to social understanding of what it is that makes human beings thrive.

Nate Hagens (01:02:57):

Okay. I would like to ask you Peter, some of the questions that I ask all my guests. Building on what you just said, you have been a lifelong, not only research and a head of the Semel Institute but also a teacher of young people like I have been, so what kind of advice do you give to young people who

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today discover a growing understanding that they're alive during this unique energy, economic, limit risk, to nature climate change and the general human predicament that we face? What do you tell young people?

Peter Whybrow (01:03:32):

What I've just been saying, which is that you find somebody you really admire. It can be within your family or beyond your family. And you really try to understand how they got to be the way they are. When you think about it like that, you learn from them because they're role models in the old sense of the term. And that role modeling, we get lost when we have what you were just asking about, which is when everything is very electronic, it's not a role model anymore. It's even happening in psychiatry. People, they're talking to each other on Zoom as we are. The fact is that you lose the organic nature of real relationships.

Peter Whybrow (01:04:18):

So that's the most important thing. In a society that works, you build on the natural attachment that people have for each other. And you build facility into the culture, such that it enables that attachment, not the other way around. You do not have a technical interface that interrupts it.

Nate Hagens (01:04:38):

Well building on that, I don't understand it, so I expect my listeners probably don't understand it, from a neuroscience psychiatric standpoint, what is the healthy, organic nature of human relationships and how is that different than what we get from our social media interaction with other humans?

Peter Whybrow (01:04:59):

Well, we are talking to each other through a social system. It's an electronic system. I can see you. You can see me. I can hear me et cetera, et cetera.

Nate Hagens (01:05:10):

You and I are friends, and we've known each other a long time and I feel like we talk on the phone and get a lot of social interaction. I feel good when I hang up with you and that we had a good, warm meeting of hearts and minds.

Peter Whybrow (01:05:22):

Yes, but both of us have learned that capacity by being with real people. It didn't just happen. If we had never seen each other, except in this way we're talking to each other now, that would not be as organic. I would not know Nate Hagens the way I do, because of all the other things that we've interacted over the years. We have not seen a lot of each other, but I've been impressed by your efforts in the world. We talk a lot about those things.

Peter Whybrow (01:05:54):

In other words, we shape each other's behaviors. And in shaping each other's behaviors, especially when it's a small person, when it's a little child, there are such wonderful little moments. I remember when my granddaughter, she's in college now, but I remember we were walking around here on one of the paths around the house here. One day we were holding hands, and she says to me, "Are you my cousin?" And I said, "No. I'm your grandfather, my dear?" And she said, "Well, so how does a grandfather differ from a cousin?"

Peter Whybrow (01:06:36):

It's that sort of silly little stuff that goes on all the time that makes people... they get into each other's heads. And it's that type of interaction that makes a big difference to people when they grow up. It's not money. It's not the house. It's the person.

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Nate Hagens (01:06:55):

So the point is that in our generation-

Peter Whybrow (01:06:58):

We were lucky.

Nate Hagens (01:07:00):

Yeah, well, we formed true human relationships. We went out of the neighborhood and played until it was too dark, and we had to go home. And now people are getting their same social interactions on a screen with people sometimes they don't even really know. And so the depth of the humanness is non-organic in the way you phrased it.

Peter Whybrow (01:07:21):

Right. There is a drawback to modern society, especially in the highly developed countries, because that's not what human beings are. Human beings are just like your two dogs. They like to play together. I had two dogs once. One of them developed a sarcoma. They were this mother and son. The mother developed a sarcoma of the back leg, one of the back legs. The kids loved the little animals. They were only puppies at the time. We took the leg off because we thought, "Well, it maybe it'll live another six months." She lived another 15 years, and she ran around on three legs. And whenever her son became rambunctious, because they used to really love to play with each other, she'd grabbed one of his real legs and pull him over. I mean, she knew how to interact with that son of hers.

Peter Whybrow (01:08:17):

That's mammalian behavior. Not nearly as sophisticated as we are. But it's that type of interaction that everybody remembers and loves and likes. That's what human beings are. We've got to love and like each other, otherwise the world goes to hell in a basket.

Nate Hagens (01:08:35):

And right now we're not loving each other. And the liking of each other, is the Facebook like, not the real like.

Peter Whybrow (01:08:41):

Well, that would be my suspicion, and I think there's a lot of evidence for it.

Nate Hagens (01:08:47):

So Peter, what do you care most about in the world?

Peter Whybrow (01:08:51):

Well, what we were talking about. I've spent my life trying to figure out how I can be more helpful to others, and I get an enormous pleasure out of that. I have lots and lots of attachments, as I know you do. That is what I find the most valuable thing in my life is other people. By the way, it's not all love and kumbaya. Some people I fight with because I don't agree with them. That's also good.

Nate Hagens (01:09:21):

Well, I bet our ancestral tribal life, with 150 people in bands on the Savanna, was also messy. What are you most worried about in the coming decade or so?

Peter Whybrow (01:09:33):

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That we're going to actually in part, because of what we were just discussing, as we lose our human connections, we're going to get even more into the very contentious and frightening political interactions, which are now developing. You see it within this country. We're one of the only big countries in the world that has only democratic countries, that only has two parties. And both of them are now cemented into their own little castles. It's crazy stuff. I think that's going to get worse and worse. And you can see that the fighting among the larger groups is also getting worse and worse.

Peter Whybrow (01:10:14):

I think that we need to be worried about that. We need to think about ways in which we can go back to the fundamentals of behavioral neuroscience and say, we've got to foster ways in which China and America don't have to be fighting with each other just because they have a different philosophy about the way the world works, trying to decide whether Taiwan should be this or that, there are ways in which we should talk to each other, perhaps. So I think that the way in which the future of the world unfolds is in part tied to the sorts of things which you're trying to do, which is to elevate the general awareness about what the world is like and why we do need a course correction.

Peter Whybrow (01:11:06):

The only way we're going to get it is by moving away from the reflexive, which has become in itself an addictive engagement because of the way in which everybody wants to make more money, so that we can move to a reflective way of thinking about things. Because at the moment we do behave reflexively. Sometimes we have evil people who promote that, but there aren't that many people in the world who are capable of being that evil.

Nate Hagens (01:11:38):

So just out of curiosity, what you just said, in the universe of other behavioral psychiatrists in the whole world, what percentage do you think would agree with your general assessment? Or is it because of your knowledge of ecology and limits and resources and climate change that gives you this wider arc, a vantage point of our situation?

Peter Whybrow (01:11:59):

Well, I like to think it's the latter. I've always been fascinated by cultural things. I had some really good teachers when I was young; back to the attachment thing again. I think that I get pleasure in life about thinking about these complicated issues, but also in trying to influence other people and learn from other people in the small things that matter. So I've learned an enormous amount from... I learned things from you and I also have learned a lot from the people I've cared for over the years. And at the same time, I suspect I've also helped some other people.

Peter Whybrow (01:12:42):

It's this interactive thing that I don't want to give up on. I don't indulge in Facebook, et cetera, et cetera. It may be a generational thing. Like you, when I was a kid, I spent most of my weekends and in the summer, got on my bike and just rode out into the country with my friends, fell into ponds, did all that sort of thing. But I much prefer that stuff than doing what I think Facebook would do for me.

Nate Hagens (01:13:12):

We actually had no idea how good it was when we were growing up. But I was more curious as to the state of neuroscience psychology. Is there a growing awareness that we are kind of a sick society? You used Finland as an example of changing the education system. Are you an outlier in the field of psychiatry with the views you've espoused during this past hour, or is that field coming to understand these things?

Peter Whybrow (01:13:45):

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I may be an outlier. I was blessed with a very good education by some very fine people who knew about how the human beings work. I became interested in neuroscience, the biology of neuroscience, when I was in medical school, and the two things have sort of merged as I've grown older. I don't think that everybody gets that advantage, but I think I have tried in my academic career to provide that sort of advantage. That's the sort of place I tried to build at UCLA by recruiting basic biologists at the same time as recruiting extremely fine psychologists and psychiatrists who understood human behavior. Not everybody can understand all of them, but I got the pleasure of being able to put this group together and just learn from the fact that they would talk to each other.

Peter Whybrow (01:14:42):

I think that's what leaders like yourself and others have to do. It's to meld the very best in people's behavior, such that they come out at the other end with something that's greater than what they went into it. And that's, of course, the whole point of life. That by the time you get to my age and you're beginning to stare into the grave, you think, "Well, what did I actually learn? And how can I pass this on to somebody else?"

Nate Hagens (01:15:14):

Well, I've always believed despite my PhD being in natural resources and energy, that this all comes down to human behavior, and we can't understand human behavior without a biology and a historical perspective and fusing that in with cultural possibilities.

Nate Hagens (01:15:32):

So, in contrast to the last question, what gives you most hope about the future, at least the next coming decade or so?

Peter Whybrow (01:15:40):

Well, I don't want to be sycophantic, but I think that the sort of work that you're trying to do now and bringing in people who have political and social influence in the country is very, very important, because it has to be grassroots, but that rootedness has to also have a vision which carries it forward. Sometimes when I was lecturing, I would make the metaphor; you think of the drops of water on a rainy day on the window pane. Eventually, if it really begins to rain hard, they coalesce. And what you really need, and more and more people who are beginning to think like you are, beginning to be willing to give up something in order to achieve something else, those are the raindrops that begin eventually until they coalesce. And when something coalesces, then really things begin to happen.

Peter Whybrow (01:16:42):

And it can happen here. It could happen here. I mean, the fact is that there are lots and lots of very smart people in the US. We've got lots of problems, but I think that we can create an opportunity now because it's a wealthy country, it's a country where we may not be way up there in terms of education, but we're not too bad. We can put together things that are beyond the material, and then I think everybody in a peculiar way will have a better material life. It won't just be something that you purchase at the store.

Nate Hagens (01:17:19):

Okay, last question, sir. If you were a benevolent dictator or you could make one wish for humanity in our present circumstances, what would it be?

Peter Whybrow (01:17:32):

That's a tough one. I think in some ways that little thing that I read out from the film script of Margaret Thatcher is, there's a lot of wisdom in there because it starts with very small things, but unless you realize the implication of what you're doing, it does in fact, in the long run shape the way in which you

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are going to behave. And if you go down the wrong path and you're not willing to accept the fact that there are several different paths that you can take at any one time, then you do end up in cul-de-sacs. It's a problem. So I think the philosophy that I would espouse is that you keep on looking, keep on questioning, and that in the long run becomes wisdom.

Peter Whybrow (01:18:24):

That's what Charles Darwin did. At the end of the book, I talk about being on the Galapagos Island, where I've been several times. I was running a program there in economics, actually for the Mont Pelerin. I wasn't running it by myself, by the way. I think that tells you more about the attachment side of things. But I think that if you think about Charles Darwin's Odyssey, his grandfather was somebody who was interested in these things. His father was interested not so much. He took this voyage knowing nothing about it. He was in his early 20s. He sort of volunteered.

Peter Whybrow (01:19:07):

After three years on this boat, all this stuff that he had learned slowly came together, such that he began to realize when he was on the Galapagos, there were all these little finches, they were all related to each other, but they were all different. They all had different beak sizes. He missed that the first time. But when he got back to London, somebody pointed that out to him. And he said, "That means that they were all related, but they changed because of the environment they were living in." That was the beginning of the whole concept of evolution, which of course caused extraordinary consternation in the British church at the time.

Peter Whybrow (01:19:45):

But that's the sort of thing where if we all do our little piece, sometimes bigger things happen. The drops on the window pane coalesce, and suddenly somebody says, "Ah." And I think that may happen here. The pollution in the seas, the this, the that. Everybody says, "This has got to stop and we're going to stop it." And we could do it then when we get to that point.

Nate Hagens (01:20:11):

So we need to wake up, understand this stuff, connect with other people, and then, in the process, change our thoughts, which ultimately could change our destiny.

Peter Whybrow (01:20:22):

You see, in one sentence, you have completely described everything that I believe in, and it took me an hour and a half.

Nate Hagens (01:20:32):

All right, my friend, thank you so much for your time and lifelong research into human behavior and seeking wisdom. I will post links to your new book, *The Well-Tuned Brain* on the show, and I'll definitely have you back to unpack some of the deeper, longer questions in the second half of the book.

Peter Whybrow (01:20:52):

Thank you, sir. It's always fun to talk to you. Take care, Nate.

Nate Hagens (01:20:56):

I'll talk to you soon.

Peter Whybrow (01:20:58):

Yes, indeed. Bye-bye.

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Nate Hagens (01:21:00):

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