

The Great Simplification

Nate Hagens (00:00:02):

You are 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, and 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. Today's episode, we will be talking with Chuck Watson. I've known Chuck for about 15 years when we used his damage infrastructure maps on the oil drum.com every time there was a hurricane that was threatening the oil and gas infrastructure in the Gulf of Mexico.

(00:00:52):

But over the years I've come to know Chuck and realize that he is one of the smartest humans I've ever met, and he pairs his intelligence with wisdom, which is a trait that I really value. Chuck has worked on risk in many fields related to civilization, and he's worked for governments, for government agencies, and in the private sector. And to be honest, I don't even know the particulars of Chuck's professional background because it's complicated and confidential and I'm probably not supposed to know. Suffice to say that Chuck has become a friend, a colleague, and is on a team of humans trying to educate and wake people up on the risks that we collectively face. This episode surprised me because we ended up talking about a risk that most people don't talk about, which is geopolitics and the increasing chance of a nuclear exchange. I hope you learned some things as I did about this increasingly important underlying risk to our future. Here's the conversation with Chuck Watson.

(00:02:11):

So Chuck, you and I have known each other going on 15 years. We met when you were doing risk analysis for the hurricane impact on Gulf of Mexico oil infrastructure when I was running the Oil Drum, and we've become friends and collaborators and often compare notes about the world situation. But you are a risk expert. You've spent your whole life analyzing risk. And my job right now is telling stories about the human predicament to leaders, government officials, students, the general public. And risk is kind of a central theme to my work on the human predicament because we face so many risks at different timescales, at different levels of consequence. But how do we

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even deal with risk? How do we understand risk? I don't think our modern world is one that our ancestors ever had to deal with. So could you just start us off by explaining what risk is and how our society thinks about it, and how we should think about it, and we'll go from there.

Chuck Watson (00:03:33):

Yeah, yeah. It's interesting because you really can't untangle risk from uncertainty from the decision making process. And in fact, a lot of what I end up doing ends up only indirectly being what you would call risk in the sense of what are the odds something bad's going to happen or not happen. A lot of it boils down to looking at data, looking at the uncertainty in that data, looking at how do you convert that data into information. In other words, so let's say you've got this climate model or you've got this model of the probability of a nuclear war happening or some obscure thing like that. Well, okay, that model has information, has data going into it. You're then crunching that data, creating more data, derived data technically.

(00:04:24):

Then you're going to look at that and try to convert that into something actionable. Some information is what I tend to call actionable data. It's boiled down. It's something that you think you understand. You think it's, I hate to use the word truth and facts, and we can talk about that a little bit later, because as you're saying, and a lot of the work you do and a lot of your emphasis has been on how us fire apes try to navigate a modern world. And I think that's so critical because we don't deal with a lot of high consequence, low probability situations. And so if you think of something like a hurricane and a hurricane coming in, making landfall someplace, well, a bad hurricane may be a one in 50-year event, it may be a one in a hundred-year kind of thing. So that's usually at or outside our lifetime experience.

(00:05:18):

So maybe we heard about it from our parents or grandparent or a story we read about, but it's not really real to us until it happens to us. So that tends to create a problem that we call risk homeostasis, which is one of those fancy words. Another piece of this that's kind of interesting that nothing happens for a long time. We make decisions, we do things, we run red lights, we speed a little bit, nothing bad happens.

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Then that one day when we're speeding or that one day we run the red light and somebody else comes barreling through the intersection, uh-oh, well we didn't get away with it that time. So then that creates an opposite problem that when something bad happens to us within our short frame time experience, we overreact to it. So the pendulum swings based on our short term experiences. And so that has a huge problem propagating through the whole process. We tend to overreact to risks we've experienced recently and underreact to risks that we haven't experienced recently.

Nate Hagens (00:06:21):

Well, actually we underreact to events that we haven't experienced, but the risk was still there if there was a 10% or a 20% risk of some of nuclear war or something. But there was no nuclear war. Our brains emotionally think that odds were 0% even though it was 10% and we navigated it. So I can think of several examples of where that's relevant and why it makes yours and my work more difficult. Specifically the financial problems with debt. We've never really had a deflationary Minsky moment in the financial markets. Every time we've run into problems, the central banks or other institutions have come to the rescue. So it seems like we can continue to borrow indefinitely without a problem.

(00:07:14):

Another is in your field, nuclear war or nuclear exchange. We've never really had an event like that in the last 50 years, but the risks have been non-negligible. So what you're saying on risk homeostasis is that psychologically our brains over and underreact to our perception of risks and in this case with financial and nuclear risk is we've made it through a lot of metaphorical landmines and therefore our behaviors naturally take on more risk because we were never faced with the consequence. Is that correct?

Chuck Watson (00:07:53):

Yeah, exactly. And you can look at that in lots of fields. And one of the areas where a lot of research and a lot of really interesting papers were done on this is trying to study NASA after the Challenger accident. You had initial engineering study, which basically said don't launch below 40 degrees. Well, they came in and one time did a

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launch at 38 degrees and everything was fine. Then you do another launch. Well, we got away with it that time, we can shave another degree off it. And so you keep resetting your window until it doesn't work.

(00:08:22):

And then what happened after Challenger? The opposite. They bumped the criteria up to where they weren't launching, oh, there's a rain shower out of The Bahamas. We better not go today because it's potentially risky and we don't understand it. And so the pendulum swings and we tend to underreact or overreact to, in you're correct in the terminology, to the hazard, you underreact or overreact to that hazard based on your short term experience, even though the probabilities haven't changed.

Nate Hagens (00:08:52):

So you've told me before that low risk often means high consequences. Can you explain what that means and why that's relevant today?

Chuck Watson (00:09:01):

Sure. So you look at something like, again, hurricane is probably the one that people are familiar with, that the low probability events, the one in a hundred-year events, if you look at say, the US economic system, that's a \$100 to \$150 billion event if you look at long term. Now, that's where you get into a problem because what was, again, using the hurricane example, because of growth, because of development in the coastal zone, population growth, what used to be a \$50 billion event is now a \$100 billion event. So I've seen, for instance, NOAA just published a new set of billion dollar disasters and if you look at it looks all front loaded or backloaded. It's all happened in the last 10 years. That's just because the coastal zone has two or three times as much exposure on it. So there's more stuff there to break.

(00:09:58):

Well, that gets into the whole decision making process as well. And you can call it the law of unintended consequences or how trying to fix one thing breaks something else. FEMA flood zone regulations. So we go in and go, well, we've got this stuff in the coastal zone, let's increase the building codes and make it so that you have to build something that's not as vulnerable. Well, okay, let's say you reduce your vulnerability

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by half, but it costs you five times as much to build that thing. Well, guess what? Your loss costs, your loss probabilities are actually bigger after you made this supposedly smart fix than it was before.

(00:10:42):

So that's where you've got to be really careful in making sure risk, probability, uncertainty, hazards, it's a dynamic landscape. The floods we just had in the Midwest, again, that's a hazard where if you look at it was maybe a 50-year rainfall event. But the problem is we had built, there was a Walmart super center and distribution center that was built, paved surfaces. All that water that used to absorb into the ground was now running off into those creeks and ended up flowing right through that town. So just because you have an event and you understand what that risk is today, and next year you may design a 25-year plan based on that risk and in three or four years it may be invalid because something else changed.

Nate Hagens (00:11:27):

So here's a dumb question. How does the risk homeostasis kind of morph into the risk singularity in our culture? For instance, we have endocrine disrupting chemicals, we have climate change, we have biodiversity loss, we have resource limits, we have financial limits, we have geopolitical risk, we have all the things that you're working on and many other things. If we did the appropriate thing to avert all those risks, that would be the entire focus of our economy. How do we invest a little to protect against these?

(00:12:06):

And you talk about one in a hundred years, nuclear war or climate change of the risks that are being discussed are kind of one in a species sort of timeline. So how do we even think about all these risks? And maybe you could explain the concept of how risks are additive or not. Because if you have seven risks and they're all 10% chance of happening, what is the math of that? Maybe just explain how we think about all this because to me it seems like we're living in a world of unbelievably numerous risks and they're not all independent. There's some overlap and some of them trigger others. How can we think about all that?

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Chuck Watson (00:12:51):

Yeah, and that's a problem that goes back to the problem with how humans perceive their world. So you hit on a really good one because a lot of people would look at it and go, well climate, you do climate and you do nuclear war. How do those two mesh? And of course they mesh quite a bit and the probabilities are all interwoven in an extremely complex way. So what happens if there's even a small scale exchange of nuclear weapons? And I can think of multiple scenarios, but one that's on people's mind right now is Ukraine. And you think of what might happen there where the US gets involved and starts to lose a conventional conflict.

(00:13:34):

Well, we've changed the rules of engagement and we've changed the US as how it thinks about tactical nuclear weapons and has expanded the arsenal and expanded the situations in which we think it would be appropriate. It used to be you think of the '60s and the Cuban missile crisis, everybody just assumed once you start slinging tactical nuclear weapons around, it's going to end up going strategic with the big missile exchanges.

Nate Hagens (00:14:01):

Let me pause you right there. The US has a unique position on this, right? We're the only country that is allowed to use nukes. Can you explain the situation there?

Chuck Watson (00:14:13):

Yeah. All of the other countries, Israel's a little bit ambiguous on it, but all of the other countries basically have a no first use policy. They've declared that they will not be the first to use a nuclear weapon and there's some nuances to it. For instance, Russia has been very clear in stating that they will not be the first to use a nuclear weapon unless it's an existential, and they've gone on, and there's documentation of what they consider to be an existential event like armies crossing the border and pushing deep end, and Moscow is besieged, those kind of circumstances.

(00:14:51):

So essentially what they're saying is we're not going to use nukes unless we're about to collapse. The US has said, "Well, we'll use them for a lot of other things." So for

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instance, the US has said that it is willing to use tactical nuclear weapons in response to cyber attacks. Imagine that. That is actually US doctrine. I can send you the documentation that shows that.

Nate Hagens (00:15:18):

How can we get away with that is because we're top dog on the military and that's the only way that other countries won't band together and reject our policy? I don't understand.

Chuck Watson (00:15:29):

I don't really understand it either. And it's partly why I don't think Americans fully appreciate the extent to which America's not respected in the world. We're feared, but when it comes to being a moral ethical leader, countries deal with the US and do what we tell them to not because they like us, not because we're the shining city on the hill anymore, but because they're afraid of us. And because we're like the slightly crazy guy that you want to move carefully and not make sudden moves around. And understand that kills me to say that, because my first experience is working for the US government. I served in the Air Force in the 1980s. I've been as a consultant to a wide variety of agencies, literally shed blood for this country. It just kills me to have to say that.

(00:16:21):

But I go into international meetings and it's that level of respect for the moral authority of the US, the moral position of it, just has completely evaporated since I would say the mid 1990s. So to conclude that or to kind of draw that thought to a close that the US is not only what we say because when you're looking from an intelligence standpoint, it's capability, it's intent, and it's capacity. It's what you're saying you're going to do, and then are you building the tools you need to do that? So the US has just started production on the B61-2 nuclear weapons, which is going to mean almost nothing to most of your audience, but that's essentially a new class of selectable yield weapons that can be carried on fighter aircraft.

Nate Hagens (00:17:16):

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Here's another dumb question, sorry to interrupt. Why do we need more nuclear weapons? We have enough in the world to destroy the world hundreds of times over. What's the logic of "oh, we need a few more"?

Chuck Watson (00:17:28):

Oh, you're now into the wonderful world of acronyms. And this is an important point. If you look at the '60s, '70s, '80s, the Cold War with Russia, there are two prevailing schools of thought developed around nuclear weapons. The one that most people are familiar with is mutual assured destruction or MAD. And that's the one that says you start using nukes, their value is deterrent. Because basically once you cross that threshold, it's going to get out of hand and kill everybody. And so that basically says the only reason you have a nuclear weapon is to keep the other guy from using it on you. And you build a survivable deterrent so you don't have a first strike capacity. So nobody dies. In other words, nobody uses the weapons or everybody dies. Mutual assured destruction.

(00:18:16):

The second school of thought, which actually was one that I got my initial training in, it's called NUTS. And first off, only humans could come up with acronyms like MAD and NUTS to talk about nuclear bombs. NUTS is nuclear utilization targeting strategy. It's a school of thought that says you can use nuclear weapons. They're just another weapon system. It's another part of your mix. And so you can plan to use them. And that there are breakpoints between tactical use, operational use, and strategic use. In other words, you can get away with using small nukes against selected military targets without significant risk of escalating to a general exchange.

(00:18:59):

So if you look at that, so let's look at Russian weapons systems, US weapons systems, the Russian weapons tend to be large yield and dirty, which says if you use them, there's a lot of bad consequences. And that's the trend that they have tended towards over time and stuck with. China, essentially the same thing. They're not building a lot of these small yield, selectable yield kind of weapons. It's the big ones. It's the deterrent weapons. The US over the last 20 years has been going towards building

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smaller, more easily delivered the W88-2, which is able to be launched on submarine-launched ballistic missiles.

(00:19:40):

That's an extremely dangerous weapon because you don't know if you see a submarine launching one of these at you. Is it one of those small weapons that's going for a small target or is it the beginning of a general exchange? So it's very destabilizing. So if you look at leaving politics and just leaving aside and putting the intelligence hat on, if you look at the kinds of weapons that the US is building, it's saying we're building weapons that we intend to use for tactical use, not just for deterrence and assured destruction.

Nate Hagens (00:20:15):

And it's not just the US. There's other countries that are going from MAD to NUTS, right?

Chuck Watson (00:20:20):

Not so much. If you look at say, what Russia is doing is very interesting. Their weapon system's avant-garde because all these different systems. They actually are gearing more towards precise target hypersonic weapons carrying conventional weapons. So they're trying to avoid that nuclear threshold by building advanced conventional weapons that can inflict tremendous damage on military targets and are virtually unstoppable in the sense that it's very hard to target and counteract an incoming hypersonic weapon.

Nate Hagens (00:21:00):

So I assume based on your recent comments and conversations in the past that you think NUTS is nuts.

Chuck Watson (00:21:07):

Yeah, I don't think it's a smart strategy, especially if the other side... Russia is saying, "Look, you use a nuke, you've crossed the threshold. We're going to have to act as though you have crossed that threshold and are going to be using strategic weapons."

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China has essentially said the same thing. And so, you balance what people say they're going to do, what their weapons mixes look like, what they're going to do.

(00:21:33):

Russia at least is building a capacity to at least shoot down small scale tactical nuclear weapons. That scares the US quite frankly, because you look at a lot of our weapons, the cruise missiles are reaching a point of obsolescence against the advanced Russian air defense systems. If you launch a salvo, very few of those are going to get through, which means you're going to want to increase the yields on the salvos. It gets into very complex calculations on that, but it's a messy situation and it's dangerous.

Nate Hagens (00:22:07):

We're going to get back to that because I have some deep questions to ask you about that. But getting back to how this started, how do we think about risk? And you were explaining how climate and nukes are interrelated and you were talking about Russia. But I mean all this stuff just compounds on each other, the different risks.

Chuck Watson (00:22:28):

It does. And that's a great point, Nate. And what I was trying to get back to was, okay, I do a lot of climate modeling. I've been a peer review scientist on IPCC. You would think, at least the public side of a lot of my work, is with weather, geophysical hazards, that kind of thing. So if someone asks me what's the greatest risk humanity is facing? Because right now most people are saying, oh, it's climate. And to me, you have to, when you're looking at hazards and risks, you got to know what timeframe you're thinking about. And you ask, how should you think about risk? Well, this is that process is okay, if you look at a 100-year timeframe, yeah, climate's probably the biggie. We're radically changing our climate systems and it's going to change agriculture. It's going to change whether you can live within a hundred miles in the coast.

(00:23:14):

There's Florida going to be underwater, which may or may not be a bad thing depending on what you think of Florida. So if you look at those kinds of things, a

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100-year climate environmental issues, if you look at a 50-year timeframe. There's some people that would still say climate, but I know me and you would be saying, no, it's financial risk, it's resource depletion. It's those kinds of things that start to really look at that we're on a growth curve that is just not sustainable. And so we would probably think in those terms. But what's the biggest risk in the next 12 to 24 months? Surprisingly, it's nuclear war. And in my estimation, what's worse, in one sense, and one of my favorite catchphrases as you know is it's worse than that, is of course, if you have a small scale nuclear exchange, guess what? You've just triggered all those other risks. You've just melted down the financial system.

(00:24:09):

Imagine what would happen to the markets, to global commerce if a war broke out where people start slinging nuclear weapons around. And even the small scale exchanges. Some of the recent studies publicly available now are showing that especially exchanges with the modern nuclear weapons mixes like the US is looking at using where you're ejecting a lot of soot. It's not the airburst you think of as the 1960s strategic. You're going after hardened, buried targets, which throws a lot of stuff into the atmosphere. That stuff comes down generally in the oceans. What happens if you shut down phytoplankton production in the Atlantic for a year? Which is what even a dozen or so tactical nuclear weapons could do. So you just caused a cascading environmental catastrophe even with the small scale nuclear exchange.

Nate Hagens (00:25:03):

So in the 1970s, everyone was worried about nuclear war and very few people were worried about climate change. And now 50 years on, everyone is talking about climate change and virtually no one is talking about nuclear war. It's kind of a flip of that conversation despite them being linked, like you say.

Chuck Watson (00:25:25):

Yeah, exactly. And again, if you look at the risks now, I would argue, and again, I've entered government service and my career began in the early 1980s, so I had to study the Cuban Missile Crisis. I wasn't alive or just a baby at the time. But I did live through the Abel Archer incident. I lived through Reforger incidents.

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Nate Hagens (00:25:52):

I don't know what those are.

Chuck Watson (00:25:54):

Yeah, and see that's it. You don't know what those are. And you probably, you've heard of the Cuban Missile Crisis.

Nate Hagens (00:25:59):

Yes.

Chuck Watson (00:25:59):

You probably did not hear about Abel Archer. I'm sure you don't know what the Pristina Airport incident in 1999. That was when the so-called peacekeeping forces in Yugoslavia when it was disintegrating... Just a quick summary of it, you had Russian forces that occupied an airport as part of the Serbian force. And then you had the NATO forces had come in. Russia had occupied an airport that NATO was expecting to occupy. And General Wesley Clark actually ordered a British Airborne Unit to go and take that airfield away from the Russians, and ordered them to open fire on them. (00:26:42):

And one of the reasons, I don't care for General Clark, he ordered them to open fire on them. It was really a misunderstanding and miscoordination. Yet here we had the native commander ordering, he ordered Lieutenant General Jackson to, as a British commander, to go in and by force retake that field. Well, Mike Jackson told Clark, "Look, I'm not going to start World War III for you," that's his exact words. So that's just here in the last a little over 20 years, there have been other incidents where we've actually come close to these kind of exchanges.

Nate Hagens (00:27:18):

So I read, two reasons why. One, we don't have access to that sort of information, but perhaps more importantly, even if we did have access, that's such a thing that shuts down human agency so much that it's like, I don't want to hear about that because there's nothing I can do about it. Or at least there's a perception there's nothing I can

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do about it. So what you're saying then in the field of nuclear exchange, peer on peer globally, that we have experienced risk homeostasis. In other words, in the last 50 years, the odds of global nuclear war have been much greater than zero, even though emotionally we feel like there was virtually no risk. Wasn't there a paper written or something that the last 50 years there was like a 60% chance of nuclear war or something like that? I don't remember.

Chuck Watson (00:28:10):

Yeah, that was a PNAS paper that was done a couple years ago. And there've been other papers in other journals that have come up with 40 to 60%. Some will go as low as 30%. But most of the thinking is that if you want to say a coin flip, whether or not we wiped ourselves out, that's probably pretty reasonable. And it's important. I think it was actually higher than that.

Nate Hagens (00:28:37):

Higher than 60%?

Chuck Watson (00:28:39):

Yeah. I don't know how we did not end up blowing ourselves up. And right now how we've managed to avoid it. And again, you look at these incidents, there's some unfamiliar with that, you can't really discuss too much. But you look at, again, the Pristina incident, you look at the submarine incident during the Cuban Missile Crisis, all of these incidents. And I sometimes joke with people, and the sad thing is it's not really a joke, I've said, "Well, I personally stop global nuclear war on three separate occasions. Once it wasn't even my fault for almost starting it." And what it boils down to is how many times we came so close and it was one person. The fire breaks didn't seem to work right, the normal processes. It was down to the individual. It was the actions of one individual.

(00:29:36):

And had it been a different person there, had it been slightly different circumstances, the probabilities, you can't calculate that. And the plus side, and this gets back to why I'm afraid of the current situation, on the plus side, you said human agency. Individual

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human beings. You look into the abyss, the abyss looks back, and maybe you turn away from the abyss. And I think that's what happened in a lot of cases. But what happens when you're no longer afraid of a nuclear conflict? And that's what concerns me about the current generation of American leaders.

(00:30:15):

You're just hearing the last week, we've had two separate congressmen say, "Well, in the situation in Ukraine, we need to kill some Russians." Imagine someone saying that in 1970 or '80 or much less '60, "We need to make a point. We need to kill some Russians." You're talking about whether you agree or disagree, whatever you think of the Russian government or our situation in the relative geopolitics, you're talking about shooting at military forces of a global nuclear power. I mean, my God, is that where we are?

Nate Hagens (00:30:50):

I know one of the reasons that you agreed to do this conversation with me is because you deeply care about this and hope that something can be done about it. Would more public awareness of these risks help? What can we do to make a nuclear exchange globally less inevitable than you're kind of painting it?

Chuck Watson (00:31:15):

Well, and that gets to all of these other problems. All of these have a common thread, whether it's nuclear risk or environmental risk, which either climate system or financial system, it all comes down to governance.

Nate Hagens (00:31:31):

Oh, governance, okay. I was going to say we have a brain mismatch with our ancestral environment. So you're taking it a step further and it's governance.

Chuck Watson (00:31:40):

Governance is how we overcome... And that's another thing too, I think we sometimes forget is... I really love your expression, fire ape. Because that to me really captures kind of where we are. And the other expression that said derogatory way sometimes is

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you'll say, I hear people say that a situation is monkeys in a nuclear power plant. That's actually what we are, monkeys trying to run a nuclear power plant. And of course, we're smart enough to build these things, and are we really smart enough to manage them properly?

(00:32:15):

And the problem is, when you start to how you run these systems, a lot of our instincts like tribalism, our lack of ability to perceive more than the short term gain, and that gets into, as you're talking about, brain chemistry and all those other factors, all this boiled down to how do we create systems of governance that take into account the complexity of the modern world, the extreme dangers, but also the extreme opportunities of a lot of these tech technologies?

(00:32:55):

We've taught recently, and of course, all in the news about artificial intelligence and the networking and all of these things, CRISPR gene editing and all of these amazing technologies that have come into play. And yes, even for nuclear power and being able to do these kinds of things to make the world a better place, make it safer for us, and make it safer for the dolphins, make it safer and better for the environment. Those technologies can go either way. But unfortunately, what tends to happen is our instincts are tribalism. The need for getting that rush of power and success and accumulating stuff even well beyond the point where it makes any difference to us.

(00:33:42):

So we've got to build systems of governance that are capable of dealing with the fact we are basically just tool making animals. We still have all those drives. We need to make sure that there are mechanisms in place to manage that aspect and take advantage of the opportunities of all the amazing technologies that we've developed while minimizing their risks. And so that's not a good place to be in a lot of ways because our current systems of governance are utterly incapable, and they're in fact, aggravating and making those technologies more dangerous.

Nate Hagens (00:34:22):

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I'm going to come back to that because that's the heart of it, but you said something else that made me question something. You brought up dolphins, and I'm just wondering, the example you gave earlier that some 10 or 12 nukes exchange would shut down because of the soot in the atmosphere would shut down the food webs in the Atlantic Ocean.

Chuck Watson (00:34:40):

Yeah.

Nate Hagens (00:34:41):

What about the Pacific Ocean? Would the dolphins there be okay, and the food webs just be slightly less affected? Or is this a global thing or a regional thing?

Chuck Watson (00:34:49):

No, no, that was probably hemispheric. If you're talking a small scale exchange, and I just use the Atlantic as an example because I'm sitting here just a couple miles from the Atlantic. So again, that's nary human interest. It's like I care about the Atlantic, what goes on in the Pacific, that water's cold and I can't swim in it anyway. But yeah, you're right. We're talking about a hemispheric kind of thing for a small scale exchange. Of course, a global exchange, you're screwing everything up.

Nate Hagens (00:35:16):

Why aren't people in the climate community talking about this at all?

Chuck Watson (00:35:20):

Largely because the majority of the information and the parameters you need to do these simulations are largely classified. So that's a major issue. You can wrinkle out some of this from public documents, and that's what the public studies have been done in the last few years. You go back to even the landmark studies that Carl Sagan and the crew did with nuclear winter scenarios in the '70s. So it's possible to do it, but it's also, if you look at who's going to fund that kind of a study, well, it's probably going to be defense department or one of the defense related think tanks. What are they going to do? They're going to classify it so it's never going to reach the public

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view. And especially if you're talking about doing something that's limiting a weapon system that you feel like you need to build, then maybe you're not even going to look at it that closely.

Nate Hagens (00:36:16):

So this brings up another question, just thinking out loud. I'm just starting this podcast, you're one of my few guests, but for better or worse, I'm a systems synthesis and I'm trying to put together energy, money, the environment, the brain as individual and aggregate levels, governance, politics, geopolitics. And it strikes me that I want to help society navigate what's coming. And there's a universe of things that are true and relevant and interesting. But a big chunk of that are things that create information hazard that actually won't be helpful if people hear them. A big chunk of that is things are depressing to people, and a big chunk of that is things that will get me canceled in culture because people won't want to hear them. And what's left is then less relevant to our real situation. I just had that thought as you were speaking. Do you have any thoughts on that or...

Chuck Watson (00:37:20):

Welcome to my world, because if you look at virtually any of the areas I work in, it's pretty depressing. And if you go in and try to do an earthquake plan for a community and you're going to tell them, "Well, you're basically, you're one in 500 chance, you're going to get wiped out," the instinct is to say, well, why do anything about it? Because it's either not going to happen in my lifetime or my kids or grandkids, so who cares? And the other thing that tends to happen, again, it's a human nature thing, and particularly in the US when you're talking about doing community planning, is, well, the federal government will help us out if it gets bad enough because it won't affect the whole country. The kind of risks that we're talking about affect the whole country at once. There won't be any help coming.

(00:38:10):

So it's complicated. And what I try to do is figure out what are the things that help in the short term against the hazards people see every day or that are more likely to see? And then how do you blend that so that it's also dealing and taking the edge off

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some of the longer term hazards? So if you look at, say, like a hurricane coming in, you can look at something like, well, beach tree nourishment, adding more sand on the beach, protecting your sand dunes. Well that's helping the environment. It's helping tourism because now you've got a nice place for people to go and it's protecting you against the hurricanes.

(00:38:49):

So it's hard, but you have to find things that will help with those big risks that help on the small end. And I think that's where we keep coming back to governance because okay, good governance means the trash gets picked up on time. It means you've got a system where you've got a good solid healthcare system. That means you've got a stable economic system. It's all those kinds of things that blends together. And it also means you're less likely to suffer from these catastrophic big risks.

Nate Hagens (00:39:22):

So let's go down that rabbit hole a little bit. There was such a thing that we might agree was good governance 50 years ago, 80 years ago, 150 years ago. But what's happening now is this phase shift towards first social limits to growth. In other words, the economy globally and nationally is still growing, but it's being shared now by fewer people. So a lot of people have not experienced growth in the last 30 years, which leads to polarization that and social media and AI and some of the other things we could talk about. But governance today seems like it's placed on a game board that makes good governance the way Walter Cronkite might have described it less possible. So we are undergoing in real time a phase shift in governance in a negative way. Given all the risks that you and I talk about, what sort of governance structure could we look to in the future to help? And how do we get that started? I have no idea.

Chuck Watson (00:40:36):

Yeah, that's a real tough one. I can see a system that would work, but I don't know how we get there because it would make a lot of people mad. And actually that raises, Nate, a really interesting point because we started the discussion. You can start and design something that may be perfectly fine for the conditions that you face now. But

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then over time the conditions change and then you start tweaking it in ways that doesn't work. And I would say the US government's a prime example, something small that looks on the surface like a good idea. Senate, making the Senate popularly elected. The Senate used to represent the states and the state governments, but that change of now they represent people, they're popularly elected.

(00:41:25):

On the surface, that's great. That's more democracy, that's better. But it also really screws things up because the original system was designed around these sovereign states. So now we've got this split system where the states still have tremendous power. The president doesn't have the authority really to order you to wear a mask during a pandemic, for instance. But the state governors do. Well, that's a real problem because now you've got individual states with individual leaders who have very different worldviews who may or may not want to go along with it either for religious beliefs or science beliefs, or just a sheer political orneriness. So the system that was fine for 18th century with sovereign states limited communications, you tweak it in a way that you think, oh, we've got better communications now. We can make it more democratic. By making it more democratic, you broke it.

Nate Hagens (00:42:22):

So don't you think that trend is going to accelerate the battle between state governors and the federal bureaucracy, president, executive branch as events unfold in the next decade?

Chuck Watson (00:42:37):

I think so, and I think you're seeing that to an extent now. The problem is, as you know, there've been a lot of talking about risks and systemic risk within, say, the US political system. It's a real problem. People talk about civil war, talk about breaking up. Well, it's not that simple because you look at a state like Georgia, which ordinarily you would consider, even though we ended up with two Democrat senators this time, the reason for that is there's a very deep urban-rural divide. And so if you do go down that road, and I don't think we will for a number of reasons, but if you went down a road to a serious conflict civil war type situation, there's no boundaries.

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(00:43:22):

It's not like north and south where you've got two completely different economic systems and two different social systems. It's within a state, even within a city. I mean here in Chatham County, you've got the county, the suburbs that are largely Republican. You've got the urban areas that are Democrat. How are you going to split that up and even have a... It is just going to disintegrate into chaos. It's not going to disintegrate into any kind of organized conflict.

Nate Hagens (00:43:48):

So here's a conundrum that I am emotionally processing in real time talking with you. I can make the case for the type of things that you're saying should only be said to elites who can change them. At the same time, the elites are a product of our population and our virtue and our values and our engagement with the issues of the world. So how can your message and your knowledge about the risks that we all face, including the granddaddy of all, which is some peer-to-peer nuclear conflict, how can that be helped by more general public awareness? And I'll just put it bluntly, there's a reason you don't do a lot of podcasts and were willing to do this because you were very worried about this. And clearly you think there is a path forward to both change our governance and somehow defuse the growing nuclear risks in our world. What do you think?

Chuck Watson (00:44:55):

And that hits to a vital problem that we have, and that's information and how information flows, and how we've got this rupture now of people classifying things as misinformation. In my experience, there's less misinformation. It's more isolated correct data points that are then being misinterpreted. And so you look at what you mentioned about elites, about governance, say, I believe that you've had Dick Gephardt as a guest on your podcast. And talking about the Iraq War in 2003, how that information you would think, how did a leader of this nation end up with that kind of bad information about WMD.

Nate Hagens (00:45:44):

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Right. And it was pretty much unanimous at that point. Colin Powell believed it. I mean, everyone believed it.

Chuck Watson (00:45:50):

Well, you say everyone believed it. Analysts didn't believe it. People at my level absolutely didn't believe it. And again, I was involved in some of that, and I can tell you nobody really believed it. The problem is when you get higher in the organization, you start to get selection bias. It starts to be, if you're given information, something that's maybe... For instance, chemical weapon precursors. Well, that was the big deal during the Iraq thing. And it's like, oh, well, Iraq has chemical weapon precursors. Well, today you get a bifurcation. People say, "Oh, well, Bush lied." They didn't lie. They were actually correct. There were precursors there. But guess what, Nate? Every Home Depot is a supermarket of mass destruction from my perspective. I mean, you've got chemical weapons precursors in Home Depot, in Walmart, and all these other places.

(00:46:42):

So if you're doing an intelligence analysis. You then come back to, well, okay, is it militarily significant? And maybe if you've decided on a course of action and you're trying to justify that course of action, you don't talk about whether it's militarily significant or not. You just basically throw out, well, we're worried because someday they may have that capacity. So that's what we're going to push. So you start to select and go, you focus on, oh wow, precursors not reading or not caring about the wider picture. It's like, well, we can't ever let it get beyond precursors. So that's where the problem is, what makes good leadership, what makes good decision making? Certainly what makes someone giving some the ability to be elected. Those are different talent sets. And again, how do you blend all that to get into good governance?

Nate Hagens (00:47:35):

Underpinning all that is the fact that humans prefer simplicity and certainty. We don't like uncertainty. So we prefer messages that are simple and confident about a path. And our world is incredibly complex and nuanced and fraught with risk. So there's the individual human behavior aspect, and then there's what manifests in governance and leadership. And this reminds me why I never call you on a Monday because you

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usually get my week off to a bad start. And after this podcast, I'm going to go decompress with my dogs.

(00:48:15):

But we're alive at this time, my friend. And we have to play a role in defusing these risks. So getting back to the nuclear risk, maybe just expand a little bit, if you would be willing. I've read the news, most people have, there's saber-rattling with Ukraine and Russia and the UN. And the US role in the UN, and it seems to be being diffused a little, but you seem to think that there are significant odds in the next 12 to 24 months that that gets out of hand, if that's true.

Chuck Watson (00:48:52):

Are you aware that two days ago, I guess three days ago now, Russia basically delivered the US and NATO an ultimatum?

Nate Hagens (00:49:02):

No, I was busy chopping wood and making a colorful video about energy.

Chuck Watson (00:49:07):

I've been watching the news here in the US and in Europe, and it amazes me how little our current government seems to... I'm not on the inside anymore, but just from what I'm seeing on the surface on the outside, what happened to all the old Russia hands? The old Soviet people that understood what was going on and understood communications. It basically, Russia delivered draft treaty outlines, which a lot of people here in the West, and they mentioned it briefly on CNN, on Fox, oh, well, it's just paper. It doesn't matter. They were very specifically laying out what they consider to be red lines, what they consider to be here's things that worried about you need to take seriously.

(00:50:01):

And I wonder how seriously they're taking it on the inside. And it's a little bit dated because it's from 2009, but I was horrified to see, if you recall, when Hillary Clinton, the Secretary of State, gave Serge Lavrov, the Russian foreign Minister, this red reset button. Well, the word reset was actually the wrong Russian word. How is it possible for

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the US Secretary of State to give something to the foreign minister of the Russian Federation something that is the wrong word?

Nate Hagens (00:50:40):

So that was the geopolitical equivalent of my autocorrect on my phone.

Chuck Watson (00:50:45):

Exactly. And how is it possible, one of our email exchanges recently, I said, World War III is probably going to start from Google Translate or autocorrect, or both. And that's a perfect example.

Nate Hagens (00:50:58):

That's a joke, right? That's not serious.

Chuck Watson (00:51:01):

Well, think about what a misunderstanding...Lavrov laughed it off. But what it did was let the Russian team know these guys aren't serious. They're doing this gimmick and they're not even able to pull this gimmick off. How can we trust what's going on with them? If you look at things like translations, and this gets to what you're saying about information, the current geopolitical situation. A good example is Putin was recently quoted, and he has said in different contexts in slightly different ways, that the collapse of the Soviet Union was the greatest geopolitical disaster of the 20th century. That's kind of a literal translation. And so a lot of people have leaped on that. And you hear all over the West, "Aha! He wants to recreate the Soviet Union."

(00:51:51):

But if you look at it in context and you look at what he actually said, he wasn't saying the collapse of the Soviet Union as in the loss of the Soviet Union was the problem. It was the collapse itself that was the... So you get into linguistics. Another Putin quote is that he said that no one with a heart does not miss the Soviet Union. No one with a brain wants it back. And so when you put those in context, you understand what he's saying is that the way the Soviet Union broke apart, what happened with NATO expanding to the East, even though there were multiple solemn assurances that it

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would not, has created a high geopolitical risk. And so just taking that as a... It is one situation because I happen to be pretty familiar with it because that was my area and what I worked in.

(00:52:45):

So you can take that to look at Taiwan-China. You look at various other geopolitical conflicts, you can extrapolate that to energy and resources in a lot of ways. And that it takes a very deep understanding of a lot of these issues. And how does that deep understanding at an analytical level get converted into information that then gets to a political leader who is making decisions? And that's really the focus of a lot of what I'm looking at. And the problem is just that you've asked indirectly a couple ways, and how do we fix this? And this is something that I'll throw out.

(00:53:28):

I'm not sure what our time is like at this point, but I'll throw a bomb in literally, figuratively here. Democracy. Does democracy work? Is democracy a good idea? How much democracy is too much? Touched on that with the Senate. At what point does having someone who has the skills to be elected as a political leader in a democracy, are those skills really such a good set of skills to be making these kinds of decisions? So that's a tough thing to look at and a really tough problem to handle because we're so conditioned to think more democracy is better. Is that really true in a very complex technical environment?

Nate Hagens (00:54:14):

Well, I mean, a democracy only works if the citizenry are engaged and educated about the issues. And I mean, I don't know how that's possible. I'm not even educated, as much as I know about the systemic predicament, I know very little about the things that you're saying, which brings up a tangential question. I mean, I can just imagine President Biden's day and daily briefings, and right now there's a lot on Omicron and COVID and lockdowns and masks and changing the flight rules and things like that.

(00:54:50):

But then you've got all the other things going on. The build back better plan was just not a pass because of Manchin and all the progressive versus middle-of-the-road

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Democrats are infighting. But then you throw this stuff on what you're talking about, Ukraine and Russia, at some point it almost becomes unmanageable all the different risks that we have, whether it's democratic or not.

Chuck Watson (00:55:15):

And that actually raises a good point, and it raises a concern that I've seen happen in our government, and that the political influence has been seeping lower and lower into the various organizations. And I'll toss out one example is the Defense Department. And did you know that the joint chiefs of staff are no longer in the chain of command and have not been for, what, 25 years now? 30 years?

Nate Hagens (00:55:41):

I did not know that.

Chuck Watson (00:55:43):

The joint chiefs are no longer in the chain of command. The president can directly issue orders to what they call combatant commanders in the field.

Nate Hagens (00:55:52):

So what's the role of the joint chiefs then?

Chuck Watson (00:55:55):

They're advisors. They're in an advisory capacity. They no longer have direct command authority. Now, the original thinking and the reforms that were put in place in the early '90s, the rationale for that was the joint chiefs were too powerful. They could be too obstructionist. That thinking was that by making them advisory, it took them out of the chain of command, gave the political leaders a direct link to the combatant commands, which made them more accountable to the political leadership. Okay, maybe nice in theory, but what about the flip side of that? It makes politicians too powerful. Let's say you have a nuclear youth scenario or a bombing scenario that where even conventional war, you're going to start.

(00:56:41):

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Well, okay, a two or three star combatant commander doesn't have the connections to Congress that a member of the JCS does. He doesn't have that high visibility profile. Can you name the head of Norcom? I mean, I doubt most congressmen could name who the head of the North American command. But you know who the joint chief is because he's testifying before Congress and all that. So what you've done in that concrete situation is you've taken out somebody with the stature that chair of the JCS, he's not going anywhere except maybe to Lockheed Martin when he retires. He's not-

Nate Hagens (00:57:18):

What you're really describing is in this unbelievably unique period of economic growth and largesse on the backs of technology coupled with fossil surplus, our political system has self-selected for politicians as opposed to capable technocrats on the issues of the day.

Chuck Watson (00:57:40):

Exactly.

Nate Hagens (00:57:41):

And that is a self-selecting thing that has been a positive feedback, which means that not only is maybe the structure not conducive to the risks that we face in the coming decades, but the personnel might not be as well.

Chuck Watson (00:57:57):

Exactly. And you look at the number of political appointees, you look at how deep into the organization's political influences, and partly that's a societal social thing, the concept of... I like to think of myself, I'm pretty well apolitical in the sense that...

Nate Hagens (00:58:18):

I like to think of myself that way as well.

Chuck Watson (00:58:23):

I've served and acted as a consultant to all kinds of governments, both here in the US and internationally. And what I care about is solving problems and making things

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work better and making people's lives better. And as I've said on my blog in some of my posts is you want to fix climate change I can give you a plan that Adam Smith the ghost would write a new chapter in Wealth of Nations or Lenin would rise from the tomb and cry out liechten in Red Square. I mean, it doesn't matter to me. You can take a Marxist approach. In fact, I think just over my shoulder here, actually, it's the other shoulder. We have Marx, and then the opposite extreme we have Bender who is the ultimate libertarian. So I don't care.

(00:59:16):

We can go from Marxism to libertarianism. I think in certain circumstances, either of those philosophies can solve problems and can make a better society. So it's my job as whichever direction society is going to take is to say, well, here's how you can do that within that framework. The problem is you've got to be willing to listen to expert opinion. And that expert opinion has to be apolitical, neutral, unbiased. So that when I tell you, "Look, this isn't going to work," I'm not telling you it's not going to work because I want to create a socialist utopia. I'm telling you it's not going to work because it's not going to work. And you need to trust that because as you just said, you're never going to understand. You're a smart guy, but you haven't spent 40 years studying computational fluid dynamics.

(01:00:11):

So if I tell you our best climate models are saying X is going to happen, well, you've got to almost accept that. I can explain it, I can try to tell you the uncertainty, but you as a decision maker have to trust that I'm telling you that in an unbiased way. That system in this country has broken down. And I blame scientists, I blame people like me. I blame scientists for part of that, and I get it. You know, look at the '70s and '80s, a lot of the leading researchers in climate were looking at the models and going, "Holy crap, we got a problem here." So they went to Congress, they said, "Look, you've got to do something about this." Congress people said, "Well, what do we do?"

(01:00:54):

Well, at that point, I think you have to, as a scientist, step back and say, "Look, there's multiple options, there's free market options, there's centralized government options. But I will work with you within that framework, but I can't tell you which philosophy to

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use behind it because I don't want to get pinned with the policies. Because once you do that, then I'm taking sides and the other side's going to say, 'Well, is there a real problem? Or are you just using that problem to force some kind of social change?'" Which is exactly what happened with climate.

Nate Hagens (01:01:30):

Well, in my experience in DC the last two years, universally, my meetings had three things in common. One is the people were political. How does this risk you're talking about land on the D versus R? The second is, I got plenty of other problems. This is in the future. I care about the right now. And the third is, okay, I understand, but what can we do about it? I need to have a response. And it's very difficult to get rid of those three things and actually work on problems.

(01:02:04):

I will publicly acknowledge right now for those viewers that watch my Earth Day talk, one of my grand interventions, my 20 interventions that I suggested was this idea of a Council of Contrarians. And you, Chuck, are the one that gave me that idea. A council that would act as maybe a fourth branch of government where there would be bipartisan, nonpartisan experts that would have negative authority, not positive authority to enact any legislation or a policy, but the ability to veto bad ideas.

Chuck Watson (01:02:41):

Well, and that kind of actually goes back to what we were talking about with the nuclear conflict problem that actually you just hit on. Where my thinking on that started to develop probably is that it's most of the times when something bad is avoided, it's because somebody said no to a bad idea. And an astronaut, I believe it was John Young, who was very famous for saying, "There's very few situations you can't make worse by doing something." And of course, from a political standpoint, the pressure is have a program, do something. And Patton, again, quote factory here, but Patton was also famous for saying, A failure to decide is a failure. But a decision not decide is a decision." So giving politicians and we as voters, and we need to let politicians say, "I don't know," you need to let them say...We need to give them the

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flexibility to compromise. And that's something that's also missing from our current political dynamic.

Nate Hagens (01:03:52):

So since you have the mic here, maybe do you want to expand a little bit on this idea of a Council of Contrarians or save that for another day?

Chuck Watson (01:04:00):

Yeah, just to toss it out, if you gave me a clean sheet and said, "You're emperor for 20 years. Restructure our society and government," the first thing that I would do, there's way too many politicians, there's too many elected offices. Here in Chatham County we vote for a coroner. Really? I understand the politics of it because back in the old English common law, and this by the way gets to another point that to me is so critical. You notice a lot of times I talk about history and periodization. How do you divide history up into chunks so that you can...

(01:04:34):

Well, when does history start? Because if you look at the Arab-Israeli conflict, well, do you start it in the year 500 when the Israelis were able to leave Babylon and go to the promised land? Do you start in the turn of the last century with the beginning of the Zionist movement? Do you start in 1949? Do you start with last week? And where you do that, that's where your answer ends up largely. So that history and taking a view and making sure you understand the circumstances, I think is critical. I lost my train of thought.

Nate Hagens (01:05:13):

But with the blank page on the Council of Contrarians.

Chuck Watson (01:05:18):

So my blank page system design would be reduce the political offices. Make being a leader, a profession, a decision maker. We tend to think politicians are leaders, but they're not. They're politicians. They are experts at getting elected. And we just sort of hope and pray that they're also good leaders and good decision makers. Well, you

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look at somebody like Trump who was a great politician, I mean, he was able to get elected. He had a lot of help from the media and you can argue over all that. Not really a great leader in the sense of the only people that followed him for the people that were predisposed to follow him. So he was able to pull the political feat off of getting elected. Wasn't really good at bringing people around his point of view perspective as leadership as a decision maker. Yeah, I would say it was a train wreck.

(01:06:14):

I could make similar arguments about Biden and that the system that got him elected performed quite well. You look at here in Georgia with the way that the campaign was run, had nothing, it was all about strategy and tactics, had nothing to do with really either... It was politics, had nothing to do with either leadership and absolutely nothing to do with the ability to make decisions once you get into office. So I would create a structure where you're not eligible to run for a higher office until you have demonstrated an ability to perform and make good decisions at lower level offices. And so how do you do that? Well, in Roman times, the Roman Republic had censors, and the censors had a lot of different functions. They conducted the censuses of course.

(01:07:05):

But one of their other functions was again that negative contrarian role where they could throw someone out and say, "You're no longer eligible for political office because you were corrupt." And so censors themselves were no longer eligible. It was composed of generally former senators and eventually there became a lot of processes. You got to have checks and balances to make sure that that system doesn't become corrupt. But having people whose role isn't to lead, it isn't really to make decisions, but it's to review other people's decisions and look at it and say, "Yeah, go back and rethink this. This is not technically astute." That's particularly vital because, as you say, we've got stove pipes of technology. Being an expert in AI does not make you an expert in geopolitics. And being an expert in military affairs doesn't make you an expert in the environment.

(01:08:03):

And so getting multidisciplinary, getting people who are experts together, but also having generalists. We tend to focus on somebody and oh, you get your doctorate in

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economics or in atmospheric science or something. Well, okay, that's nice, but how do you cross those fields? The terminology is specialized. You get all of these things that you get over specialized and then you have a poor political guy who's got elected that he wants to do a good job.

(01:08:38):

And so now he's got, as you were talking about with Biden, you've got a parade of virologists coming in to talk to you one day. You've got maybe a military guy coming in the next day and then you've got an economist coming in. That's where you've got to have this very reliable framework of experts who can provide that level of guidance and expertise. And then the check and balance. We currently, our check and balances are our three branches, but having a branch out there that their sole purpose is to look at things and say, "That's a bad idea," I think makes a lot of sense.

Nate Hagens (01:09:18):

That does make sense. And your last few sentences there, even though we're running out of runway, are tooting my horn so to speak, because long ago I decided that society does need more generalists, more systems thinkers to be able to fly up high enough and look down at our situation. So education matters, education of young people now. So we can have critical thinking, wide boundary thinkers as our citizens and our leaders is very important because our education system has so far... And yes, we have an attempt to do liberal education, but really we are stamping out reductionist expertise in a lot of these universities.

Chuck Watson (01:10:03):

Yeah, absolutely. I do want to very briefly say that I agree 100% with. I was lucky or unlucky depending on your perspective in that I was put... My undergraduate degree is electrical engineering and then graduate training in geophysics and then ultimately economics. So I ended up being a generalist almost by default because there was nobody really doing the kinds of analysis that I was doing. And so I just got pushed into that. But it's frustrating sometimes because I do deal with specialists. So I'm dealing with somebody with a PhD in atmospheric science who looks at this and goes, "You should be talking about the economics. Why are you dealing with computational

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fluid dynamics?" Even though in some ways I've had more CFD courses than they have.

(01:10:56):

Same with economics. It's like, well, you're a science guy, what are you doing talking about gross domestic product and relative... I was trying to figure out purchasing power parity in the industrial sectors versus domestic product sectors the other day. And so that's where I think you are on a really good track and something that you're doing that I think is so important is getting these students at the undergraduate level to start thinking in terms of go take a course in...

(01:11:33):

If you're studying economics, fine, but make sure you take some courses in biology. Make sure you take a course in a hard science. Try to at least take intro to engineering or something so that you know what's going on. And the universities need to be structuring it to make it easier for undergraduates to get a good broad and learn some poetry. Go learn some history, all those kinds of things. That's where again, I was quite fortunate that I was able to study history and languages and linguistics and understand those different pieces. That's vital for our future.

Nate Hagens (01:12:12):

If they're running out of room in their schedule, they could just bypass taking economics altogether, in my opinion.

Chuck Watson (01:12:20):

That's the dismal science.

Nate Hagens (01:12:24):

So let me just ask you one more question here, and I think I should have you back because we haven't scratched the surface of some of the relevant parts here. I am a systems thinker and most of my listeners are already worried about oil depletion and financial overshoot, ecological overshoot, climate change. But now you're throwing in nuclear risk and governance into the mix, which are two things I don't know a lot

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about. There's a reason you agreed to do this with me, Chuck. It's because you deeply are worried about what's coming on those two areas.

(01:13:07):

But how does sharing this information about those two risks to individual people... This podcast will not be listened to by the general public. It's going to be those curious minds who are trying to make sense of this and make better decisions in their own lives, in their communities, and maybe at a larger scale. What recommendations would you have for them to take these things on board that maybe they've never thought about that sound pretty freaking scary? What do you think?

Chuck Watson (01:13:37):

I think the biggest thing is we've got to reduce the level of geopolitical tensions.

Nate Hagens (01:13:43):

How?

Chuck Watson (01:13:44):

Well, that's exactly my next sentence was the way that we do that first off, is don't buy into the propaganda. Don't buy into this adversarial relationship that we seem to have with different countries. You look at Russia, you look at China and you look at our news today and you've got politicians who are basically saying there's a big threat out there. Is there, really? And I know it's hard because you don't have access to information, but read Deutsche Welle or read... Which may not be the best because they're kind of... It can be propaganda too, but seek out and try to understand a little more about the world and try to understand that... Try to seek out alternative information sources. Don't get in your stovepipe of, I would guess Fox News or CNN. Recognize that in the case of Ukraine for instance, it's actually, if you watch those two networks, you're hearing essentially the same things that geopolitical tensions are high, even though the perspectives are slightly different.

Nate Hagens (01:14:58):

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I'll interrupt you and then continue your thought. Two things. Number one, I think I saw a stat recently that 60% of Americans left or right have one news source. That's where they get their news from, whatever it is, CNN or Fox, it's a single source. So maybe in the show notes, you can give me a list of eight or 10 broader sites where you can get information.

Chuck Watson (01:15:23):

And so you'll hear stuff and it drives me crazy. You'll hear people say... Well, RT for instance, or Al Jazeera, at least scan the headlines to see what they say is important. And you'll be surprised because in the US it's all the political horse race. But you go look even at something like Deutsche Welle, and I'm happy to... I have a list actually of sites. Some of them you can freely visit, some of them you want to use incognito because they're considered propaganda sources by some of the... Like RT is considered this foreign agent. Or you look at some of the Chinese sources.

(01:16:02):

Al Jazeera for instance, Al Jazeera has great, historically had great coverage of Africa. And we forget about Africa, we forget about South America, we forget about these different areas where there's a lot going on. And suddenly, even if you're just scanning the headline, suddenly you realize, wow, there's more going on than what Joe Manchin did with the Build Back Better plan. And opening up that world puts those kinds of squabbles in perspective.

Nate Hagens (01:16:35):

So what you're kind of saying is that we need to... Well, the risk right now is what happened with the Iraq situation in 2003 with the weapons of mass destruction. Feels like it's bubbling up as well with respect to the Russians interfered with our election and Russians are the bad guys, et cetera. That it's déjà vu, but at a larger stakes.

Chuck Watson (01:16:59):

Oh, absolutely. And again, that gets back to, if I tell you the Russians did not interfere in our election, okay, immediately you'll get a chorus from one side saying, of course they did. And they'll point to Cozy Bear or point to the trolls. Well, the thing is, this is

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what I was trying to say about information and misinformation. In fact, Russia did have troll farms that amplified and echoed certain American voices that were saying those kinds of things. And of course, the reason why... And you may ask, well, why did Russia do that? Is it because Putin wants to take over the world? It's like, no, because the US has pumped billions of dollars into trying to build up and try to overthrow the Russian government or influence the Russian government.

(01:17:46):

You look at Navalny. Navalny is AstroTurf. Nobody in Russia takes him seriously. You read the US media, you would think, oh my God, Navalny is this well respected leader who's being oppressed by Putin. Navalny couldn't pull more than 10%. Putin actually is legitimately pretty popular. People are tired of him, but they don't see a big alternative. And in fact, the constant demonization does him more good at home than it does. So getting back to US domestic issues, ask your political leaders those hard questions. And I will say this, especially when it comes to geopolitical issues, be very careful about anything coming out of our intelligence agencies because they're basically telling you the information that has already been compiled and processed into work product that is designed to support a policy and to our political leaders. And I believe that Representative Gephardt would be now cheering this, is that it's vital that you question what's coming out of these and try to find alternative sources.

Nate Hagens (01:18:56):

So your basic message to our listeners is to keep an open mind. Make sure that you are skeptical of common news outlets. Try to learn more from alternative news outlets, and maybe shift your internal pattern recognition risk calculus to include risks of war and governance because those things are happening in the background simultaneously with the more popular risks.

Chuck Watson (01:19:32):

And I would add one final point that to me is absolutely vital. When you're looking at people that you think disagrees with you, and particularly you look at the Republican-Democrat divide here. What concerns me when I talk to people on either side of that divide, they think that people on the other side are being subjected to

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propaganda and misinformation. And they think that people on the other side don't have valid concerns because their information is bad. I know that's simplifying.

Nate Hagens (01:20:05):

Classic in-group, out-group dynamics.

Chuck Watson (01:20:08):

In-group, out-group. Exactly. Yep. Guess what? Same thing about you're subject to those same constraints and the same problem. Generally, I find you can pick any subject: abortion, voting rights, immigration, and what you find if you dig away the propaganda, you may find people are concerned about different things, but there's also a lot of common ground and I would say empathy and compassion. And so you look at what's the underlying concern. People who will say to pick one of the real hot button ones because of Supreme Court now is abortion. Well, okay, you've got those who are concerned with what they... And I think to a large extent legitimately, you're looking at an evolving human life and the dignity of that evolving human life.

(01:21:01):

But the flip side of that is you've also got the dignity of the woman who's carrying that potential human being. Well, what did both of those points have in common?

Ultimately, you're looking at how do you preserve the dignity of the human life and the dignity of a human being. And to me, most of our issues boil down to that. And then you've got this third component that's really orthogonal and that's what is the role of government. And it's important to realize when you say there should be a law. Essentially what you're saying, I authorize government to use violence on my behalf to make that happen.

(01:21:42):

I know that sounds a little bit libertarian, and I'm not taking it to that extreme because there are circumstances where government needs to say, "Yeah, don't do this." You have force backing it up. But if you think of these topics compassionately and recognize there's very few circumstances where that person you're disagreeing with is really just evil or really just has some crazy... Their concerns are probably legitimate. They're just looking at the problem differently than you are.

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Nate Hagens (01:22:15):

So what you're suggesting and advocating and hoping is that we can again maybe put country before party and have somewhat shared values again. But the misinformation, the misinterpretation of information, the distraction and the non-ecolit education combined to making us talking past each other and get hijacked by the polarization instead of recognizing the wider boundary picture of, oh my God, we're all facing these risks together and we better roll up our sleeves and have authentic conversations about the path ahead.

Chuck Watson (01:22:55):

And I would elevate it. I don't like the phrase country above self because the interests of these national entities we call nation states aren't necessarily the interests of the people that live in them. What I would boil it all down to is understand whoever you're dealing with that you disagree with. It may be that they too, are compassionate, that they too, have concerns. It's just their focus may be different. So what you need to do, and what they need to do is recognize the validity of each other's concerns and then figure out where the common ground is. Because nine times out of 10, there is a common ground. And yeah, it's going to take some compromise. But if you believe the other person is sincere, and in most cases they are, and they have real concerns, and if you address those concerns, you can come to an understanding. And that may be very meta and kumbaya, but hopefully it's real.

Nate Hagens (01:23:58):

This whole podcast is meta and kumbaya. But I do think we need that civil discourse again somehow, because without that, we're not going to solve any of these problems.

Chuck Watson (01:24:09):

And we need to extend it internationally. Russia has valid concerns. They're not pointier tables.

Nate Hagens (01:24:15):

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Okay, how do we do that? Last question, and I'm going to have you back because there's a lot of stuff we didn't get to, but how do we extend the civic discourse from domestic to international? Just a few bullet points or suggestions.

Chuck Watson (01:24:28):

Number one bullet point is we need to insist that our leaders take into account not just the domestic political concerns. So why are we pushing Europe, for instance, the way we are? Why do we care where they get their natural gas from if it's stabilizing that society? Well, we want to sell them more LNG. Selling them our LNG, that's a domestic political economic concern. Yeah, that's nice. But that's potentially destabilizing if we're creating an adversary out of Russia, because let's face it, it's more convenient. It's more environmentally sound for them to use a pipeline to send them gas. So okay, let's figure some other market for our goods. Let's figure some other way of doing it. So I would say that when talking to our politicians, we need to press them from a global standpoint, not just we do it on the environment, we're constantly after our politicians on the environment and say, think internationally.

Nate Hagens (01:25:25):

But not to go down another rabbit hole as we close. But this gets to this superorganism issue is that we're outsourcing our governance and our planning to the market.

Chuck Watson (01:25:35):

Yes.

Nate Hagens (01:25:36):

Thank you so much, Chuck. This is very informative. I learned a lot. And thank you for your continued work on de-risking our world, and to be continued, my friend.

Chuck Watson (01:25:49):

Absolutely. I enjoy talking to you, Nate. Again, what you do is pull together these different things in a way and try to get it out there for people to think about. And as

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being a systems guy, and I feel that I'm a systems guy as well on a lot of detailed technical issues. What you do is essential. So thanks for this podcast.

Nate Hagens (01:26:07):

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