All Transcripts for

Climate: Inside and Out

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Climate 1.1 - Why Am I An Environmentalist?

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I've been an environmentalist pretty much ever since I could remember. From at least the age of eight when my father first told me about the passenger pigeons and how they were extinct and how their flocks used to cover the sky, and I was really sad about that. And I loved animals. And I remember one time we went to Yellowstone National Park and we were deep in the park, we went to this lake, and there were these otters swimming in the lake. And then this gang of young men came and they started chucking stones and trying to hit the otters with stones.

It was like they were throwing stones at me. I felt so indignant and this kind of helpless rage. I just couldn't understand, how could this be? How could people do that? These beings are so beautiful. I didn't have the word sacred in my vocabulary then, but they were sacred to me. And I would read about the dwindling rainforests and see the pictures of the clearcuts. I remember there was an article about it in Scientific Ameican in 1980. I just felt so much distress about this, and getting worse every year, a new outrage every year. 'We're not getting it.' So this is something that's been anguishing my whole life.

And of course I wasn't alone; the environmental movement has been around in some form for a century, at least. So what I'm feeling is shared by many people. And I think actually on some level shared by everybody, even though they might not put that name to it. So then in the last couple decades, more and more of this care for Earth, this environmentalism - environmentalism isn't even the right word. It kind of objectifies the environment. I mean it's love of life, love of this living planet. If you love something, then its well-being is your well-being, whether or not it has some kind of tangible, measurable, practical impact on your life. If I love it and I care about it, it doesn't matter if it's providing me ecosystem services or something like that or contributing to carbon drawdown or something; I love this being.

So in the last ten or twenty years, increasingly, more and more environmentalism and this love of life has been channeled onto fighting against climate change, which seemed like a really good thing at first. When I first found out about climate change in the 1980's, I was like, "Yes! Now we're going to have to do something about it. Now the people who don't care? They're going to have to do something, because if they don't, bad things will happen to them." So it seemed a boon to the environmental movement because now we're going to be able to use self-interested reasons, not just these love-based reasons.

But I think in the last five years to ten years, some doubt has grown in me about the wisdom of shifting the conversation onto self-interest and away from sacredness and love. This began to disturb me and many of the proposals and policies that have come from the climate narrative also disturbed me. For example, massive biofuels plantations, or proposals for geo-engineering that would essentially allow us to

continue to destroy life as long as we kept, somehow, carbon levels down. Or kept global temperatures down.

And I think this missing piece narrows the policy menu to things that in the end aren't even going to solve the problem because of what I've come to discover and believe more and more, which is that this planet is alive. It has a physiology and it's integrity can only be maintained if all its organs and tissues are healthy.

So I've become much more oriented towards things like regenerative agriculture, restoring soil, restoring water, protecting ecosystems, protecting the Amazon, keeping the organs of this living Earth healthy. And of course I also believe we should reduce carbon emissions, fuel emissions. But it's becoming less and less my main priority.

And, paradoxically, the actions that come from holding each place on Earth and each species on Earth sacred will bring down carbon emissions probably even faster than current rhetoric and strategy will because if you hold every place sacred, you can't do fracking and pollute the water. You can't have offshore oil drilling with the inevitable oil spills, you can't excavate tar sands, you can't do mountaintop removal, you can't do any of this stuff, no pipelines, you know.

This is why I wrote this book. I want to call on the movement to return to love-based rhetoric, love-based strategy, love-based policies, and away from the "here are the bad things that will happen to us" fear-based rhetoric, strategy, and policies which I think will ultimately be counter-productive because the crisis - and it's bigger than a climate crisis, it's a full-scale ecological crisis - it is calling on us toward a much deeper revolution that merely finding a cleverer way to power industrial civilization. To switch to a hydrogen economy or to put wind turbines across the landscape, or fields of solar panels, and continue industrial energy production in a centralized system, and so on and so forth.

That's not the revolution.

The revolution is a fundamentally different relationship to the planet and to life where we are no longer the dominators, exploiters, and extractors in a world that is an object, but we are participants, we are co-creators, we are partners, we are members of a tribe of life, a community of life, and we seek to contribute to life, and that becomes the mission, the purpose of humanity in this time, the purpose that coordinates our gifts and our creativity.

What answers the question, "What are we here for?" The old answer being, "To rise above nature, to conquer nature." That was a completely unproblematic answer a hundred years ago. Almost everybody thought that would be a great thing, to finally conquer nature. And that's changing. That is what this crisis is about. It's an initiation into a different kind of relationship and a different conception of who we are on Earth. So I want to take the conversation to that level. Climate change is part of that conversation because it is awakening in us the understanding that what we do to the Earth, we do to ourselves. That we are inextricably tied to the fate of other beings on this planet. That we are part of Earth, inseparable from Earth. So it is a positive step in the awakening of ecological consciousness and I guess my job is to invite us into another step beyond that.

Climate 1.2 - Why Are We Addicted to Fossil Fuels?

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You often hear the phrase “addiction to fossil fuels” and usually that phrase is uttered in tones of condemnation or derision. Blame. Like “What is wrong with us? Why are we so addicted?” As if there’s something bad about us. But if you really take that metaphor seriously (and it’s actually more than a metaphor, but I’ll call it a metaphor now), then you want to ask, “What’s driving the addiction?”

If your friend is an alcoholic or drug addict or addicted to something, you’re not going to say, “Why don’t you just stop? What’s wrong with you? I’m not an addict! You are, what’s wrong with you? You must be a worse person than me.” That is not going to be helpful. In fact that is just going to be counter-productive, to say, “Just try harder to stop.”

What you have to do is unearth and meet and heal the wound, the trauma, or the need that is driving the addiction. So if someone is feeling great pain - physical pain, emotional pain, psychic pain - then they’re going to be attracted to alcohol or opioids or something like that. If they are feeling life is meaningless and they don’t get the experience of exploring their boundaries and challenging the world, then maybe they’re going to become addicted to gambling or something like that. So to understand the origins of our addictions is a step towards healing. And so collectively the same thing.

Why are we burning all the fossil fuels? Why are we consuming all the resources? Why are we laying waste to one place after another, after another. What need are we trying to meet that’s unmet? Maybe there’s not just one, but I’ll name the one that I think is the most important. It is the need for connection, the need for belonging. We are in a society where we have become so disconnected from community, from nature, from place, that we don’t know even who we are anymore. People in healthy societies knew who they were through their relationships. Because we are not actually separate individuals. That’s one of the myths of the dominant civilization on Earth. We are not actually separate individuals; we are interbeings. We are formed of our relationships and that’s why if one of your relationships is cut off, you feel like some damage has been done to yourself.

Generally speaking, most people in this society have almost no connection to the nature around them. How many trees can most people look outside and name? How many plants can they identify and know what medicine they can be used for, or what their life cycle is, or what kind of insects live on those plants and what their life cycle is. We’re looking out and the world becomes scenery. We look out and the people and they become functionaries. Service providers. But do we know? Even our neighbors, in most places in America, people don’t know the story of their neighbors, even, and just maybe say ‘hi’ to them as they pull out of their garage, but are not intimately connected.

So through this disconnection we suffer a deficit of beingness. And we so desperately want to restore what has been lost, to reinhabit the fullness of our related self. So one way to expand the self is through more and more money, more and more property, more and more control. Because to not belong, to not be held by community, is a tremendous insecurity. So as a substitute for that security of being known, of being taken care of, “someone’s got my back.” What if no one’s got your back? Then you better have a lot of money to make sure you’ll be ok.

So we have a whole society geared around developing more and more control, having more and more power over the world. And if that is in place, then endless fossil fuel and resource consumption is inevitable. If that doesn't change, then nothing else is going to change.

So we have to recognize that and begin to heal on that level and to recognize that rebuilding community, rebuilding connection to place, rebuilding our feeling being at home in the world, belonging in the world - these are essential components of resolving the ecological crisis. And that means that really, any action that you take, any way that you are in service to healing, on any level, is part of what people are calling "saving the world from climate catastrophe."

Because it doesn't do to just try to control the symptom. Fossil fuel use and climate disruption, those are symptoms, not the deepest cause. Sometimes there's a time to combat symptoms. If you have a life-threatening fever, maybe you do take the fever down. But if you don't ask what is causing the fever, then you're going to be fighting the fever forever, and not healing, and in fact maintaining the disease. Sometimes focus on the symptom actually perpetuates the disease. Like if you think the important thing is rising global temperatures, then you can fight that symptom with geoengineering. But are you treating the disease? No, you're allowing the disease to progress even further by mitigating the most obvious symptom. And eventually other symptoms are going to come because the ways that we are disrupting life on Earth, the effects of those are way more than linear scale temperature. This planet is alive and we are really interfering with the deep life processes.

Climate 2.1 - The Danger of Global Warming Fundamentalism

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So you often hear people saying global warming is the single greatest challenge ever to face humankind. We've got to treat it as just like World War Two and fully mobilize all society in order to combat this problem. And nothing else really matters. Compared to this, nothing else is important. I've had an environmentalist say this to me: really? Like, come on, Charles. You know, like, yeah, you might be interested in repairing relations between the genders or you might be interested in reviving dying languages or even in saving the lions in southern Africa or something like that. But those are not actually important because if we have runaway global warming, then there aren't going to be any lions. There are not going to be any communities, there are not going to be any languages, you know? Now is not the time to pay attention to all those things. You have to devote all of your efforts to the one important thing. The one thing that solves everything else or that allows us to even have a chance to solve everything else.

So I'm suspicious of this narrative. It is very much a fundamentalist narrative and it's very much a kind of war thinking, because when the enemy is at the gates, then you sacrifice everything else for the war effort. You sacrifice civil liberties, you sacrifice the arts, you sacrifice the finer things in life. And it becomes a way to control everybody and deny what makes life beautiful. And that doesn't mean that there isn't an enemy at the gate. I'm not saying that there isn't. I'm not saying that there isn't right now, that's not my point. My point is that there is a fundamentalist or war mentality operating in the standard narrative of climate change.

And you could call it global warming, fundamentalism or carbon fundamentalism. Here's the one important thing. It's also very similar to the mindset of money, which I think is one of the major ways in

which we habituate to this kind of thinking -- that if I only had enough money, I would be able to solve all my problems. It's the one thing that gives birth to everything else.

So when I was doing my research -- and, you know, from the Living Planet hypothesis, the living planet view, I believe that soil erosion or biodiversity extinction is going to affect the climate because it's a living being. And if you have, say in your body, if you have massive cell death, if you have an organ deteriorating, maybe you won't be able to regulate your global ecosystem, your body temperature even. So I have this hunch that the causality goes in that direction. So I go on Google and I look up the effect of biodiversity loss on climate, or I look up effect of soil erosion on climate and I get page after page of results that are the opposite. Everybody is talking about how climate change is going to cause biodiversity decline. How climate change is going to cause soil erosion, etc, etc. Which fits into -- it's a comfortable way to think. Wouldn't it be nice if we could solve all of our ecological problems and social problems, too? Climate change is causing migration, climate change is causing war, etc. etc.. Wouldn't it be nice if we could solve all our problems by addressing this one thing that that can be -- for which our progress can be tracked by measuring a number and it becomes a min/max problem, it becomes a matter of reducing a number, making a budget. Reducing this much carbon here, offsetting this forest here with another one there with solar panels here, etc etc. Maybe using carbon capture machines to draw down carbon from the atmosphere, etc etc.

This is something that we're very familiar with, this kind of thinking. So it is a reduction, a comfortable reduction of health -- which is organic and physiological and nonlinear -- into a matter of a quantity. That is a kind of a reductionism. And what is the problem with that? It leaves out everything that doesn't fit into that measure. The things that we can't measure, the things that are unmeasurable, the things that we don't understand and cannot predict, they get left out. So in the carbon reductionist frame, how important is an elephant? How important is a whale? How important is a beaver? What's the carbon contribution of these? It's really hard to measure a bear. But when you understand ecology, and when you see the world as a living being, then you start to think, OK, each of these beings, whales, bears, salmon, whatever it is. Elephants. These are an organ. These are a tissue. These have a role to play in maintaining health.

And so you start to look for it. And then you discover things like, Paul Stamets discovers that bears scratch marks on trees. So the resin, the sap comes out and and then fungi grow on that sap. And then bees are attracted to those fungi. And they derive antiviral compounds from those fungi that allow them to withstand some of the diseases that are devastating bees and maybe other insects today, which then allow them to pollinate more and maintain the food web that allows forests to be healthy and crops to grow healthy and soil to be healthy, which then draws down carbon.

So, oh, actually, bears are important. But can you put that in a model? Can you put that into a climate model? Can you possibly measure all of those multiplying lines of causality? It's impossible to do that. So those things get left out of the models. They get left out of the budgets, the carbon budgets. They are not emphasized in environmental policy. They are not, you know, climate strike people and they're not on the radar screen. They don't seem as important. When you reduce the problem to a matter of levels of carbon dioxide or greenhouse gases, you render invisible the things that only make sense, that only seem important, when you understand Earth is a living being.

So I'm asking -- and this is one of the main movements inside myself that brought me to write this book -- I'm asking that we expand the scope of our care beyond the things that we can add up in a carbon budget, that we expand it to include all of life on earth, every place, every ecosystem, every species, whether or not we can calculate its greenhouse gas effects, its carbon footprint. But we expand the scope of our care in the knowledge that every one of these beings is important to maintaining climate health, to maintaining, more generally, ecological health. This is the place we need to come from. It's a holistic view rather than a reductionistic view.

Climate 2.2 - If We All Love Nature, Why Did the Carbon Reductionism Narrative Win?

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Imagine going into some kind of government committee policy meeting or something and saying, “You know? I think we should protect the river just because it’s sacred. Because we love it and it’s beautiful. No other reason.”

That doesn’t fit into the policy conversation very well. What fits in is the costs and benefits. So if you can demonstrate an economic benefit to doing that, or some kind of cost savings, then it becomes part of the policy conversation. And this isn’t just me saying this, this is what a lot of people working hands on in the field are telling me. That they have to find some way to translate that into the language of policy.

It’s an encroachment of financialized thinking onto our collective decision making. And underneath that it’s the infatuation with numbers, with quantity, which suggests that we can understand the world and control the world through reducing the world to Number, something we can then manipulate and know exactly how to manipulate. So that’s the maybe deeper or maybe metaphysical myth underneath all of this. But as it plays out, the language of love is foreign to a lot of the workings of the political system.

You’re going to be looked at suspiciously if you just go in there and start talking about love. You have to be realistic. You have to be practical. What does that mean? What does practical mean? Practical means it can translate into some numbers, that’s what it often means. If we follow this, we’re going to end up with a world where all we have are the things we can translate into numbers because we will not have cherished and protected anything else.

Climate 2.3 - Are Social Issues Secondary to Climate Issues?

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On some level, many of us recognize it’s impossible to have a healthy planetary climate when the political climate is out of balance, or the social climate, or the psychic climate; that human relationships are connected to the state of the planet. And this might be hard to justify scientifically, but on some level we understand that a society that dehumanizes some of its members based on race, for example, is also going to be a society that desacralizes other beings. A society that exploits the economically vulnerable is also going to be society that exploits and destroys the most vulnerable places on Earth. At society at war with itself is also going to be a society that is at war with the environment, in opposition. A society that holds animals in cages, in zoos, locks them up and locks up people is also going to be a society that confines nature and doesn’t allow it to flourish.

So there’s a connection here which means that changing these social conditions is part of the same mindset, part of the same movement, in changing our ecological relationships. It’s not always obvious how social or political or economic, or not to mention relational, community level or individual healing, is

part of planetary healing. But think of it this way. How much energy do we have left over if we're spending 99% of it fighting each other? How can we cohere as a species, as a civilization, to turn our attention, turn our labor towards the healing of this earth when we're exhausting it all fighting each other? These are not trivial changes.

The changes that we need to make to come into balance and harmony and service to a living earth, these changes will only come with a strong will, a strong collective will, a strong collective intention to shift our institutions in alignment with ecological values, in alignment with the love of life. This does not happen with a conflicted, divided polity or society. We have to be in coherence.

So when you ask, what's keeping us out of coherence? What's keeping us at war with each other? What's keeping us in a state of perpetual, artificial scarcity when there is actually so much abundance? And[what's] making so many people unable to devote themselves to anything but survival, what fixates people on this war of each against all? Then we get to economics, we get to politics, we get to trauma, we get to everything about the way that we're living today. And that's why healing on every level is needed, action on every level is needed, and we cannot ignore social issues, we cannot ignore personal issues even, community issues, political issues. All of these are part of the same movement toward wholeness.

Climate 2.4 - The Mysterious Threads of Causality

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...Yeah, that's a great example. The question is: if there's a suffering dog in front of me, can I trust that taking care of that dog is going to help the situation? I mean, that so doesn't fit into quantitative thinking about the planetary crisis, helping that suffering dog. I mean, you guys have adopted this little puppy. You know, that had a broken hip and stuff. How is that going to help? That dog would have otherwise died and instead it's going to grow up and is going to consume resources. You are hurting the planet by saving that cute little puppy, aren't you? Something about that language is wrong. Like, that violates a very clear knowing of the heart. But the mind...I mean, how can you reconcile that clear not knowing of the heart with the mind's calculations?

So...to answer that question, I have to unearth where the mind's calculations are coming from. And the theory of change and the theory of causality, underlying the mind's calculations that see the world as a big collection of mathematical forces operating on masses, which means that your impact on the world depends on the calculable. Even if we can't practically calculate it. But it depends on how much force you're exerting and how you're exerting that force on the world. And how can you argue with the math? The dog's going to eat more.

But of course, you can look reached for another logic that you might say: The hardening of your heart that is required to not take care of that puppy translates into a lack of care in other realms, translates into a lack of care for the environment, translates into a lack of care for other people. That generates a society of distrust. That prevents us from cohering around a mission of service to the earth.

So there's another thread of causality that might help your mind make sense of this knowledge. And it really, for me, points to….What I've come to understand is that we don't understand. That we really do not know how this planet operates and how the cosmos operates, and that there are mysterious threads of causality that we cannot possibly follow with our minds in advance. You can't possibly know what the

effect is going to be in five years, 10 years, 20 years....five hundred years of adopting that little puppy. Because we don't know, because we cannot calculate it, because we cannot calculate the effect of bears scratching on trees or whales migrating in certain patterns to distribute nutrients in the oceans. Because we cannot calculate those things, we cannot rely on the machinery, the mental and systemic machinery of calculation to make decisions about what's important and what to choose and what to do in the world.

Therefore, we have to rely on something else. And what I rely on and what I would encourage people to rely on is the call to action that is issued through the heart that makes you care about something, that makes you love something and want to exercise your care toward that thing. To trust that. Now, why would you want to trust that? Why would it make sense to trust that? Why isn't that just like some passing fancy or some kind of emotional, you know, emotional fugue or whatever? Like some, you know, like how could that be part of a coherent evolution of life on earth or a movement toward healing? How do you know? You're going to have to actually take as...I almost want to say an article of faith.

It only makes sense if you believe that there is some kind of rhyme and reason to all of this. That where we are placed in life, what is presented to us for our care is not entirely random, but that there is an order to things. There is an intelligence to things. In other words, that there is an intelligence to the world, some kind of orchestration to the events of our lives, to the situation that we were born into, to the things that are presented to us to make choices about. When you believe that...and this is...it's not the same as saying Earth is alive....but it is aligned with that way of thinking that says that selfhood, consciousness is not only a property of human beings, but that it inheres in other beings, that it inheres in the entire planet, that it inheres in the cosmos itself. So it's aligned with that way of thinking. And you adopt that way of thinking and then you think, OK, so maybe all of us are part of this movement towards healing, and this evolution of life toward more and more life. The evolution of of matter toward more and more complexity. And how do I know to serve this thing? How does this coordinating intelligence, this will to wholeness, this will toward expansion and complexification. How does it communicate to us? How do we know, when we cannot possibly calculate or predict or know in our minds how it's going to work? How do we know what to do?

Well, I think that this coordinating intelligence, for lack of a better word, communicates to us through the organ of the heart, which is a listening organ. And the more we allow ourselves to care and to love, the more accurate this communication is. So that we know, oh, this is mine to do right now. This is the puppy that...now I'm not saying go out and find lost puppies and take care of them...but if one of them crosses your path and you feel that...it's not that you *should* feel something, it's that you *do* feel it, somehow this one got under your skin. This...this child...I met a man who is going to adopt a child. And instead of him going to the foster care system….he's a real problematic child and the guy is like 70 years old and it would be crazy for him to do this. But this is the thing that got under his skin. Something gets under your skin. Something makes you care. And you can't say that this is the most important thing in the world, and it's going to maximize the impact and leverage of my choices. And this is the high impact leverage point for action, and everybody should do this because this is going to save the world and reduce carbon more than any other thing and so we should do this and not that...you can't justify it in that way. But it's the thing that gets under your skin that's been presented to you and calls to your love and calls to your care.

And I'm saying it's OK to listen to that. It's OK to trust that, to be led by that and to watch the magic unfold. When you step into trusting that there is an intelligence to all of this, that I am part of an inconceivable consciousness beyond myself. Listening to our love and our care aligns us with the reality of a living, intelligent, conscious world or even universe. And then we begin to notice how true it is. That becomes our lived experience that sustains us in continuing to choose and to live in this way.

Climate 2.5 - Why It’s Dangerous to Rush to a Cause

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Today when you look at drought, forest fires, hurricanes, all kinds of catastrophes and you ask -- or the insect apocalypse, the global decline in insect populations. The same thing’s happening to plankton, actually. And you say, well, what's the cause? We want to have a cause. Because then there is a solution, or potentially a solution. It's comforting and fits into our mindset, into our customary ways of doing things as a society or even as individuals, to find a culprit for something: find something to go to war against, find something to attack, find something to limit, find something to control. So we're very happy if there is *a* cause for things.

For example, oh, the cause must be climate change, the cause must be greenhouse gases, and now we know what to do. It's a lot less comfortable to not have a cause, or for there to be hundreds of causes, a complex of causes, because then we don't know what to do. Then our customary way of attacking a problem no longer works because we are so fond and so comfortable with addressing the cause. We tend to project *the* cause, a singular cause onto situations that maybe do not have a singular cause. And then we go to war against the cause that we've projected. And the problem isn't solved, because we have misattributed the cause and we tend to rush to the cause that fits into our already existing world view. Therefore, to address problems on a deeper level, sometimes it's necessary to step back and to be in the space of maybe we don't understand this thing at all. So let's spend some more time observing. Let's spend some more time listening. Let's not be so hasty as to rush into a cause and to activate the solutions that we already have available to us.

Because what if these are part of the problem? When we say such and such a problem is urgent, we have to do something right now, we are giving power to the existing solutions and to the people who are already in power and have the wherewithal to deploy solutions right now. Thereby, therefore, we perpetuate the status quo by rushing to a cause. And it can be a trap. Because often the cause that we ascribe to something, it's what fits comfortably into our existing world view and validates the mindsets and methods that we currently employ. So you say, well, you know, there's been a terrorist attack. What's the cause? It must be these terrorists. Yeah, now we've got something to kill. So let's kill the terrorists. Problem solved, right? By focusing on that, we never even ask what is breeding terrorism. Criminals: crime’s caused by criminals, right? Duh. So the solution is to lock them up. Problem solved. And thereby never asking, or not necessarily asking, what are the conditions that breed crime? Because there's not one cause. You get into all kinds of messy stuff: legacy trauma, legacy racism, economic inequality, the void of meaning in our society that doesn't give youthful energy an outlet to go toward. I mean, there's not one cause. The cause is pretty much everything.

And when we realize that, then we don't know what to do. That's uncomfortable, not knowing what to do. But I think we need to go there. And in fact, the failure of our solutions is going to take us there, whether we like it or not, because any solution that ignores the deeper causes will only work temporarily. Yeah. I mean, you can temporarily stop crime or terrorism or immigration, you know, by building a wall. But the engine of these things, the engine of immigration -- that’s not affected by building a wall. The engine maybe in this case being military imperialism and neoliberal economics that make life unlivable somewhere. You're never going to touch that when you're just focused on building the wall and the whole controversy becomes, do we build the wall or don't we? And that polarized political energy, that fury gets exhausted in something that doesn't touch the deeper cause.

So, yeah. I mean, I see it in the climate arena all the time. When we rush to the cause, we end up doing things that don't touch the deeper problem and that even make it worse. One of the primary things being the cause is carbon, so let's bring down the carbon in whatever ways are easiest, most accessible. So you get gigantic hydropower plants that are currently inundating and destroying and draining vast wetlands in the Sahel, like an area the size of Belgium -- I think that’s what I read -- is going to be destroyed, basically. And it's full of crocodiles and hippopotami and all kinds of life. And it's going to look good. The numbers are going to look good. There's going to be X gigawatts of power generated. And therefore, you know, X amount of carbon saved, right? Well, not necessarily. The people living in that

area, they're not actually using much electricity right now, but they're going to start using a lot. And what about the the carbon sequestration of all of those wetlands and all of those life forms? Is that part of the calculation? That's very hard to calculate, so it gets left out.

So this is one of the errors that comes from rushing to a cause. The same thing I can say about biofuels plantations, where vast tracts of land in Africa, Asia, South America are getting purchased by corporations and more and more getting leveled and the peasants getting kicked out, the subsistence peasants getting kicked out, and planted with jatropha trees, you know, or eucalyptus trees or palm oil, and some of which goes to to fuel power plants that get carbon credits for carbon neutral energy.

And are you calculating the subsistence peasants that got kicked out and the change in lifestyle that's going to be consuming more? You're not. That's not part of your calculations. So, long story short: when our solution sets are part of the problem, when we are not even asking the right questions, but rushing to the solution that fits into our existing worldview, it's time to be a little less hasty in doing something right now and rushing to a cause.

Climate 2.6 - Disconnection from a Living World

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My wife Stella and I have been living in Rhode Island, where she grew up, for a few months now. Right by the ocean. We walk on the shore. There's this rocky part where there's tidal pools. And I really like tidal pools because I like looking and seeing -- in some of them seaweed is growing and there's snails, sometimes you can see. And she was recalling when she was a kid, they were so much more full of life. There were little fish in them. There were sea anemones. There were starfish. You know, these tidal pools were were really diverse. And now there's almost -- like I've never seen another animal in them except for snails. They're really depleted from where they were. And we went to the estuary of the narrow river where it meets the sea. And she said, oh, yeah, we used to swim in that pond right there in that brackish area. I'm not sure exactly what it's called, but she would swim in there and there was all kinds of kelp and all kinds of fish and she said one time she was swimming and this eel came right up into her face and she was really scared.

And now there's none of that. It looks beautiful, like the water is crystal clear, but there's no life anymore. And we feel really sad. Stella felt sad about that. And I think many people have -- I know I have memories like that, too, of ruined places. Of places where there's so much less life than there was when we were children.

So, yeah, another memory that she recalled is that there will be all these horseshoe crabs on the beach. And occasionally we find one now. But she said they used to be like, there would be hundreds of them on the beach. And in the morning she and her friend would go on a rescue mission because at night, these boys would go and flip them over and they'd be helpless there on the beach. Just like, senseless killing. And Stella and her friend would go and turn them back over again and rescue the horseshoe crabs.

So, you know, these stories really affected me. And part of me is like, I have this impulse also to find the cause because it hurts so much. The eels. I love eels. The eels are gone. These beings are gone. And why? Why are the eels gone? Why are the horseshoe crabs gone? And I want to find *a* cause. And today, a lot of people would say, well, it must be climate change. That's the cause. Climate change caused it. Well, do I know that, though, or is that just the convenient go-to that might even distract attention from something else that is local and that we could do something about? To make it about this global thing

kind of disempowers you. Because the only way to do something about it is to, you know, sign a petition or go on a march or something like that.

But what if there isn't *a* cause? Or what if the cause is something we haven't considered? What if it is glyphosate that has entered into the water through agricultural practices and people spraying their lawns and things like that, or other insecticides -- neonicotinoid insecticides, or the massive increase in endocrine disrupting chemicals that enter through pharmaceutical waste. And when people take these medicines and they get into their urine and they get into the water systems, what if those are affecting the eels? What if it is a combination of all of these things that make them -- that one impact makes them a little less resilient to something else and that those two together have a synergistic effect and then it makes them less resilient to something else and unable to deal with more temperature fluctuations? Like what if it's that? So again, I come to this place of I don't know.

And in that stillness, I recognize a totally irrational cause for the decline of life in Rhode Island, on the seashore. And the cause is basically those boys flipping those horseshoe crabs over. The senseless killing, the callousness, the disconnection from life that is necessary to even do such a thing. That relationship to nature, holding nature as something expendable, as a plaything, as something that isn't even a being. If it's not a being, you know, you don't have any compunctions about flipping a brick over. Not that a brick isn't a being, but just for the sake of this argument, let's say you don't have compunctions about flipping over a brick or a rock or something. And if a horseshoe crab is in the same ontological category as a brick or a rock, then why wouldn't you flip it over? Look at the way -- look at the legs waving around. Isn't that fun?

So that diminishment of the sacredness and beingness of the *world*, that is where -- that for me, if there is *a* cause that kind of underlies all the other causes, that underlies the pesticides, that underlies the fossil fuel emissions that contribute to climate change -- that is the cause. If you want to go to one cause, that's the cause. It is our disconnection from a living world. Our diminishment of that world, our desacralization of that world. Our rendering it into something less than what it really is. That's the cause. If we hold the world as a dead thing, as a bunch of stuff, as not a sacred being, we're going to make the world into that. We are going to create the world in the image of the story that we hold about the world. And that's why it's so important to change the story, to reawaken our innate perception, our innate knowledge that we live in a sacred world, in a living world, that we are surrounded by beings, that a horseshoe crab is a being, that an eel is a being, that all of the things that we are disrupting and ruining are beings.

When we see them as beings, then no longer can we so lightly choose to destroy and ruin them. We still might make hard choices. We still might cut down trees to build a house, but we will not be abetted in that choice by an ideology that holds them as just stuff. And that choice will be done in a ceremonial way. If we do not reach down to that level of cause, the story that we hold about the world, nothing is going to change. Nothing substantial. The symptoms will migrate from one thing to another. And the world will continue to die in conformity with the story that we have, that the world is not fundamentally alive. And if alive, not a being.

And I'll say also that this story that kills and diminishes the world is not just an intellectual construct. It's almost the clothing on a traumatized, hurt, wounded state of being. Those boys that were turning over the horseshoe crabs -- what were they suffering, that allows him to do that, that even invites them to hold the crabs as not alive, that cuts them off from their inherent knowledge that this is a brother, that this is a sister, that this is a relation? Who knows what happened to them? Who knows what brutal experiences they had that cut them off from their empathy? And here we come back to the interrelatedness of all healing on this earth, because when we identify the cause, *the* cause as our civilization's story of the world, and when we identify that that cause is part of a state of being that's in great pain, then we know that to address that, we have to reach to that level and all healing paths become one.

Climate 3.1 - Am I a Climate Alarmist or a Climate Denier?

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Obviously, the climate debate is highly polarized. On one pole are the extremists, the alarmists, you could say the catastrophists -- and on the other pole are those who are called the deniers. That is an epithet that already implies that that side is wrong. So I prefer to say the skeptics. Which is not to say that I agree with them, necessarily, but I like to use relatively neutral terms to describe each side, because in any polarized debate, what I've discovered is that the most important information and the key to resolving the debate is to be found in the hidden agreements that all sides share. And in the questions that nobody is asking and the assumptions that are just taken for granted.

So here we have -- well, there's a few assumptions that are shared by both sides in the climate debate. One of them is that the most important thing to worry about, if there is anything to worry about, is global warming. So the skeptics say, “And global warming isn't a problem, therefore there's nothing to worry about. Therefore, full steam ahead. No problem.” And the alarmists say, “Climate change is a terrible problem. It's a serious crisis. So we have to change our society. We have to change our economy, we have to change our industrial system. We have to wean ourselves off fossil fuels.” So both of them are agreeing to frame the entire conversation about the environment first and foremost in terms of global warming. And what does that leave out? It leaves out all of the things that I think are actually more important, that have to do with the living earth viewpoint. So that's one thing that they share: an agreement to focus the bulk of the environmental conversation on climate change.

Another thing that they share in common is that the reason that the other side disagrees with them is because they are stupid or ignorant or immoral. They are contemptible in some way. This fits into the war thinking that is ubiquitous in our culture. To find an enemy. So here the enemy, if you're on the mainstream side, on the alarm side, the enemy isn't just carbon dioxide. That's not good enough. You have to have an enemy of the greedy corporations and their executives and the corrupt politicians and the people who know better yet they're willing to betray future generations for their own short term gain. Aren't they horrible? And the implication is that if we could just get rid of these horrible people, then the problem would be solved. Which is a lot easier than changing an entire system.

So when I approached the debate and I decided I'm going to put everything on the table, I'm going to look into what all sides are saying -- well, I'm already committing a sin in the eyes of the dominant side, which would be the mainstream, the climate alarm side. Because to even listen to the arguments posed by a side they already know is wrong, you must already be somewhat deluded, because it's so obvious that they're wrong. How do we know? Because our side is right. So why would you even listen to this argument that's coming from something that's fueled by a fossil fuel company, that's funded by a fossil fuel company, or that has writers who did other things that were funded by fossil fuel company or have an association with something -- like, you can find some way to demonize the people on the other side. And both sides do this.

Then on the skeptic side, it's the libtards, you know, and the idiots. The fake scientists and so forth -- both sides have a very unflattering characterization of the other side. And so here again, I thought, OK, this agreement that the other side is composed of a bunch of corrupt idiots -- what if this agreement isn't right either? What if each side has basically created its own universe? And that's what it seems. When you go into one of the sides, they don't even agree on what constitutes valid data. The skeptic side, though, they'll provide you graphs of historical climate data circa 1980, circa 2000, circa 2018. And they show, look, the data is being adjusted to make it look like there's been more warming. They go back to the temperature data and they compare the adjusted data to the raw data. And every time the adjusted data is hotter than the raw data, if it's recent and cooler than the raw data, if it's in the past and they say, look, they're fiddling with the data. This is an artifact of of their agenda. They talk about their agenda to institute

one world socialism or something like that. And so it's like an entirely separate universe. Both sides have their own reality that they're living in. And when I try to figure out, well, what is the truth? What does the objective evidence support? I'm really out of my depth. I am scientifically literate. I have a degree in mathematics. I'm better equipped than most people to evaluate the science on its own merits. But when I get into the arcana of the temperature dispute and the reasons why it's been adjusted and the mathematical techniques used -- I have trouble understanding it after I go in one or two levels.

And pretty much every issue is like that. Like, who do I trust here? Do I trust those who are saying, yeah, the melting ice caps? You know, actually, the Arctic has gained ice in the last few years after reaching a nadir in 2007 and the ice -- that hasn't happened. And then the other side says, actually ice extent maybe has recovered some, but the age of the ice -- there's more fresh ice, etc. etc. Like, it gets really into details that I don't really have the time or the training to pursue all the way. And so basically I have to make a choice on which side to believe that isn't based on evidence, that isn't based on my ability to understand the science. I have to trust somebody. And this is, you know, this is coming from somebody who's done a lot of research and who is scientifically literate. What about the average person? How are they going to decide what to believe? It pretty much comes down to what are you willing to take on authority?

So this is one of the weaknesses of hitching environmentalism to the climate change wagon, because you're basically requiring people to trust authority. To trust it because it's scientific consensus. And a lot of people today are not feeling very trustful of authority. They're rebelling against authority, with good reason. So to say, be an environmentalist because science says so -- and science that is, I think, a lot easier to question than the more local impact of pollution and especially development and habitat destruction. I mean, you can see that, you know. You don't need a lot of science to see that terrible damage is being done. It speaks to the heart in a way that levels of an invisible gas do not speak to the heart. You have to make a mental leap to trust that levels of this gas rising are going to cause sea levels to rise, you know, in 30 years or something like that. You have to take somebody's word for it.

And that doesn't mean that the science is wrong. I'm not saying that it's wrong. The point of my book is not to demonstrate that it's wrong and it's not to demonstrate that it's right. It's to demonstrate that the things we need to do need to happen, whether or not it is wrong. And that is to protect and restore and heal and regenerate all of life. All of Earth's living systems. The soil, especially the soil, especially the rainforests, especially the coral reefs, all these things. Even if climate change is not a problem, even if the skeptics are right about everything, I still support pretty much all the things that we need to do to reduce greenhouse gases.

There's almost a paradox here. I'm still opposed to fracking. I'm still opposed to offshore oil drilling. I'm still opposed to pretty much all of the things we do to maintain the fossil fuel economy. So this is one thing I came to. It's like I actually don't need the climate change narrative to call for all of the things that people who are immersed in the climate change narrative are calling for. If I don't need it, do we need it as the flagship issue of environmentalism? Is it wise to make this our flagship issue when it's so politically polarized and when it requires trust in authority, in the integrity of the institution of science, for people to follow? Do I really want to exhort everybody to trust science when actually there are a lot of things that I do not trust science on? Science has been telling us that most pesticides are safe, that GMOs are perfectly fine. If you deny that GMOs are safe, then you are going to get called a denier. I mean, this is a common tactic. And I think even some social media now is demoting or censoring videos or articles that are "unscientific", that question the safety of GMOs, that question the safety of vaccines, that advocate alternative cancer therapies, that advocate homeopathy. These are considered unscientific. And so many people in my sphere, and these are educated people, have certain beliefs that are blatantly unscientific. They're aficionados of astrology or energy medicine or they have these spiritual practices, they practice Qigong, you know, things that are -- and I'm not saying that these things are fundamentally out of the bounds of the methods of science, but they are out of the bounds of the institution of science right now. I do think you can apply scientific practices to understand the effects of Qigong, for example. And I do think that there are scientifically valid explanations or steps toward an explanation of homeopathy.

So here I am talking about the limitations of science, at least as an institution, and thereby undermining my credibility, probably. Because if you take science as the one remaining bastion of integrity in our culture -- and a lot of people do; people do not trust politics anymore, politicians or the financial industry, those who run the economy. They don't trust anybody except academia and especially science. That's the one thing we can trust now.

And the solution to our problems is to become *more* trusting of science, more rational, more faithful to this particular way of knowing and the institutions built around it. That's what progress is. Away from superstition and toward science. So, trusting the dominant narrative of climate change is bound up in this larger value of trusting science. And yeah, I think that science bears the same strengths and limitations as the other dominating institutions of our culture. And I'm not going to call on people to trust science and then our problems will be solved. I do think science has a lot to offer in our understanding of how this biosphere works. It is an extension of our powers of observation. And yeah, so I'm not discarding it and I'm not saying that, again, that climate science is wrong or right. I might have my personal opinions on that. I mean, I'll say that I think it's wrong in some ways and right in other ways. And in most ways, I just don't know.

And that is already enough for some people to turn this video off right now and to make a lot of people feel really uncomfortable even when they know -- and I've run into this again and again -- even when they know that as a practical matter, I support pretty much everything they support and I'm opposed to pretty much everything they're opposed to and that we are brothers in arms as deeply caring environmentalists with love for the living beings of this earth. Still: very uncomfortable. And this illustrates a general principle that applies to any polarized situation and especially something that is conceived of as a war. In a war, pacifists are more detested than the enemy. The enemy kind of validates your existence, validates your identity as being the crusading good guys. You know, we're the ones saving the world in opposition to those who are trying to destroy the world. The pacifist calls that entire dynamic into question and says both sides are missing something. And I think that both sides are missing something.

Of course, most environmentalists, most climate activists will affirm that, yes, it's not just about climate, that, yes, this is a living planet. But the dominant framing of the rhetoric of the conversation and the attention that is given to some policies and not others, to some causes and not others -- it is pretty heavily directed all toward the climate, the carbon narrative, the greenhouse gas narrative. So I find myself in a bit of a vulnerable position. Sometimes I hesitate even to go there, because it disqualifies me as one of the in-group. And, but -- what happens if the skeptics are right? What happens if we go through a period of cooling? Or what if warming slows down? What if sea levels don't really rise that much? What if year after year goes by and the ice caps don't continue to shrink? And we've put all of our eggs in the basket of climate change and staked our credibility to it. Then what? And we've neglected the other reasons to care for life on Earth, drawn attention away from them and spent all this time appealing to our fear of consequences that are going to doom humanity. And these subject us to horrendous economic costs. Why take that risk, when we can appeal to our love of life and our recognition of the sacredness of all beings and places, whether or not climate change is happening? It's a win-win, in fact. Because if climate change is happening, making those appeals are still going to draw down carbon and create resiliency in the biosphere.

And if it's not happening then we're still going to be protecting and healing life on Earth. So I just really want the environmental movement to consider whether it's worth taking the risk to make it all about climate change and -- yeah, whether it's worth the risk and also whether it's even working. 2018 saw the largest rise in carbon emissions in history. Whatever we're doing is not working. What do we do then? Do we up the rhetoric, do we double down? Do we try even more energetically to incite fear? Do we do even more of what has not been working? I'm trying to remember the guy's name, I cite him in the book. Scandinavian fellow. Piers somebody. He points out that public alarm, public belief in climate change has decreased. Public concern for it has decreased in polls over the last decade, even as the science has mounted. Why? I'm not going to try to answer that right now. I do go into it in my book.

Climate 3.2 - How Do You Form an Opinion on Climate Change?

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I mean, it really seems to someone on the other side that anyone who disagrees with them, anyone on the other side, is just an idiot. Like, how can you even question it when the evidence is so overwhelming, when ninety-seven percent of the scientists believe in it? How can you -- haven't you seen the hockey stick graph? You know, there's been dozens of different hockey stick graphs, all pretty much saying the same thing. How could you possibly -- you must be a denier. How could anybody in good conscience actually not believe this? It just seems incomprehensible. And if you believe that, you're not going to bother even to look into what other side is saying. Which would be, you know, a critique of the temperature proxies that the hockey stick is built on: the ice core samples and the tree rings and things like that. I mean, every single piece of it is subject to a critique. And then they'll talk about the medieval warm period. And, you know, there were grapes being grown in Denmark and Viking settlements in Greenland. And the early Holocene Islands, forested islands, forested places that are now barren tundra and the receding snow, the receding glaciers in the Alps revealing trees that had been growing there above what is now the snow line a few thousand years ago. And so they have their entire other set of evidence. And they think that the other side must be totally deluded because they're not taking into account this evidence. They're denying this evidence, and here it is. But they just write it out of their research. And so both sides having pretty much the same view of the other.

So to either side -- and I could do the same thing in the other direction. Like, populations of waterfowl that are threatened because they're reproduce -- because spring has come two weeks earlier and they're -- I can't remember exactly how it works. But like the flowers or the plants were growing earlier and everything's out of whack, you know, like there's these knock on effects that happen when the seasons change, but the animal migration hasn't gone along with it and so forth. Like, how could you just deny this? And what about the methane, the methane bubbles and the melting permafrost? Like, they're not even considering this. And so each side just seems to be totally deluded to the other. And neither side, I find, is really going deeply into the best arguments of their opponents. It's quite the opposite. They take the weakest arguments of their opponents and set up a straw man and demolish that and feel really good about that because they've made the other side look bad, which is a tactic of war, of information war, when a narrative is itself a weapon. You can't let any data in that will dilute your narrative. So what becomes important is maintaining your narrative rather than serving what's true, if you conceive of it as a war and the other side is a priori already wrong. And that means that you will never be able to transcend your narrative. You will be impervious to being wrong and you'll never admit that you are wrong. And this isn't just climate change that's locked in this kind of deadlock.

So, long story short, I will appear deluded or disingenuous, even, to either side. Because it's so obvious. You know, how am I not getting it? That's the lot of the pacifist. And I think that the pattern of war thinking is the same pattern that is causing the ecological crisis. The degrading of the other. And I'm not saying that -- I'm not staking out a position in between both sides. It's not a compromise. It's a position outside, off the entire spectrum. Temperamentally I am more in sync with the alarmists. And I do think that the skeptics are in some form of denial, even if they're right about global warming, even if they're right that -- I don't know, the solar minimum, the declining magnetic field of the sun will allow more cosmic rays to come in that stimulate cloud formation, that reflect more sunlight and that cool the earth. Even if they're right that we're due for another ice age. They're still in denial that we are interdependent with life on Earth. And that our next step as a species, as a collective, as a civilization is to turn toward service to life and to heal the damage that's been done. And a lot of damage has been done over the last few thousand years. Vast areas have been converted to desert. The entire Middle East used to be fertile. The cradle of civilization. The Cedars of Lebanon. The Greek isles all used to be forested. Plato writes about this, the deforestation and the advent of drought and ecological degradation. It's been happening for thousands of

years. When's it going to stop? It's not going to stop by itself. It's going to stop when we see nature differently and we relate differently and we understand our purpose here differently. No longer the conquerors. No longer separate. Anyone who is in denial of this is in denial, is a denier.

Whether you believe in climate change or not, whether you -- even if you think, yeah, climate change is a serious problem, we've got to institute geoengineering and put wind turbines everywhere, so that we can more cleverly exploit nature as thing. You're a denier too. You're in denial of what your heart knows. Well, maybe I'm the one who's in denial. Maybe nature is thing. It's not for me to convince you with evidence of that. That's a choice, actually. We don't base our choices of belief on evidence, actually. We choose what is aligned with who we are right now. We choose a world story that provides a suitable habitation for our development in a current stage. And we're very capable of arranging the evidence and the reasons to fit whatever story we have about the world. There's plenty of data points that you can fit into "the world is alive" story and there's plenty of data points that you could construe to believe in a mechanistic world of force and mass, generic particles. How are you going to make that choice? It's not that those who choose otherwise are ignorant and stupid. Am I stupid? How are you going to make that choice? I have a suggestion, which is make the choice that best represents and most resonates with who you really feel yourself to be and who you want to become. And that brings up the question, who do we want to be? Humanity. What do we want to become? And what world will we live in? I would like us to make a different choice than the one that we have as a collective been making, that is killing the world. If we hold a story of "the world is dead," we will kill the world.

I would like a different choice. So I'm practicing it. Deprogramming myself from the perceptions of world as thing. Drawing on other sources of knowledge, other world stories that have been held for a long time by indigenous people, by cultures of memory, as Orland Bishop calls them. Traditional cultures. All of them believed that the world is alive, full of beings. And maybe as our own systems break down and the story that seemed to bring us to such heights of accomplishment no longer bear those fruits and we can no longer tell ourselves that every generation is happier than the last -- maybe that breakdown will bear the humility that opens us up to entertaining other ways of looking at the world, other ways of knowing, other stories of what is. That's where the environmental crisis is taking us. It's to that level, to -- really you could call it an initiation. A revolution in who we know ourselves to be. Yes. Thank you for giving attention to that possibility.

Climate 4.1 - What is the Water Paradigm?

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One thing I discovered in my research is that many of the things that are blamed on global warming or blamed on greenhouse gases are actually, at least to a large extent, caused by disruptions in the hydrological cycle, disruptions to water. Especially floods and droughts, but also even rising temperatures.

Water is...so for one thing, water vapor is the dominant greenhouse gas on Earth. But its effects are a lot harder to model because, for one thing, it's not globally distributed in a relatively uniform way as carbon is. Some areas there's a lot of it, some areas there's not very much. And also the effect on temperature that water has depends on the form that it's in. If it's haze, then it has a warming effect because it's a greenhouse gas. But when it forms clouds, it has a cooling effect, especially during the day. At night, it actually has a little bit of a warming effect. It also depends on how high the clouds are.

So this is really hard to model. Therefore, it is not very effectively modeled. Making it even harder is that the formation of clouds is influenced by life. Cloud formation is seeded by aromatic chemicals that are given off by plants and seeded by bacteria that have ice-nucleating proteins on them that allow clouds to form at a lower altitude, which means that they reflect...that they have stronger cooling effect if they're at a lower altitude. Water...so when you when you look at the world through the lens of water, it gives birth to a different set of priorities than looking at the world through the lens of carbon. Although there is actually a large area of intersection because the best way to heal water is through soil and forests and wetlands and some other ecosystems too. But mostly, I'll concentrate on soil and forests.

In a healthy system, what happens? The water cycle is as follows: the rain falls on the earth and it is soaked up completely with almost no runoff because the soil...healthy soil is like a sponge. It's penetrated, it's very thick or it's covered with layers of leaf litter and plants. It's penetrated by mycelium, by roots, and mycorrhizae, and earthworms and animals. And so, the rain comes and it soaks down, down, down, down. Some of it stays in the soil and some of it sinks all the way down to the water table, and into the deeper, deeper aquifers. And once it's in the soil, then over time, the trees can pull it up and they transpire through the leaves. This water, then evaporates from the leaves. It forms new clouds that are in part seeded by the trees themselves. And then it comes back down as rain.

So what happens when you cut down the trees or you plow up the grasses? The grasses do some of the same thing. What happens then? You have bare soil. Well, the rain comes and because there is no roots holding it in place and because, especially if you've been spraying chemicals on it, because the soil is depleted of life, then it's no longer such a sponge. And some of it maybe soaks in, but a lot of it runs off carrying the soil with it or it evaporates as it stands in puddles. And you've seen these pictures, you know, of the parched, cracked earth that happens after the rain has fallen and it evaporates. So now you don't have the trees feeding the rains for days and weeks and months after the rainy season is over. Instead, you have a drought. And the parched earth, the exposed soil, not to mention parking lots and asphalt and things like that. That creates a lot of sensible heat that creates high pressure zones that prevent new moist air from even coming in.

So cities and cultivated agricultural land can push away the rains into uninhabited areas, into the mountains, for example, intensifying the rains there and causing flooding. Which is exacerbated by the fact that the soil can't soak up so much water anymore. And the wetlands have been drained; these are sponges for rainwater. So now you're getting....whereas before you had reliable rains, now you have a flood-drought cycle. And then it gets blamed on climate change. Which excuses you from doing anything about your agricultural practices or your forestry practices.

One of the principles that I like to work with or use as a conceptual lens is the principle that "life creates the conditions for life." So healthy forests, not only do they recycle water that originally comes in from the oceans, they actually bring water in from the oceans. Because they transpire so much water...this is called "the biotic pump", this theory...the water rises, condenses. The condensation, creates a low pressure zone that then pulls air in from far away, ultimately from over the oceans. So you're bringing new moisture in. In Brazil, they call it "the flying rivers." And when you cut down the forests, everybody knows...this is vernacular knowledge...that the rains stop coming. That forests and water have an intimate relationship.

So there's way, way more I could talk about with water. I could talk about the damage caused by exterminating beavers, and by straightening waterways, and by building dams. Because the beavers used to slow down the water. A lot of what are streams today were not streams two hundred years ago. And we're not wearing these deep channels. But they were more of like a series of water terraces, because there were five or ten beaver dams per mile. On the old maps, places where there is a stream now that was once just the middle of a marsh where a bog or something like that. So beavers and other animals and plants, they maintain a healthy water cycle. And when you disrupt that, then all kinds of chaos arises. Floods and droughts and higher temperatures, too.

I looked at these...there's a whole bunch of research coming from this group of Slovakian hydrologists and one of the maps, I remember, they have an area of land with different land uses, different

topographical features. There's a forest, there's a parking lot, there's a cultivated field, there's a lake. And the map has the temperature over each of these different micro-regions. And, you know, it's like 20 degrees Celsius higher over the parking lot than it is over the forest. You can call this a heat island. And you know, some other climate skeptics, they say, "Well, we're not really having global warming, it's just the urban heat island effect." Well, that is of scant consolation if we're turning more and more of the earth into a heat island. So this is...so, yeah...disrupting soil and cutting down forests that, independent of carbon dioxide, is already heating up the planet and disrupting climate.

And you can look at it from the carbon lens as well. When you expose all that soil, it blows away. It washes away. It's not held there. So that carbon in the soil, it oxidizes and it goes into the atmosphere. Massive amounts of carbon dioxide. It's the largest source, actually, of atmospheric carbon dioxide. It's from damaged land. And of course then forests, when they're cut down they can no longer store carbon. And the grasses can no longer sequester it.

So this leads to a different set of priorities, a different set of policies that says that...and again, this is true for me whether or not global warming is happening...that our top priority has to be to protect and regenerate. To protect and restore and heal the systems that maintain life, the living systems that maintain the conditions for life. And key to those is water. Water and carbon too, carbon in the form of soil, carbon in the form of biomass, carbon in the form of life. These are sacred substances.

So, this could happen on every scale. Every person can take care of a little bit of life. But really, what we need is a radical change in our agricultural system. And a moratorium on any more deforesting of, especially, pristine old growth forests. Those have more powerful effect on maintaining climate equilibrium. And also to regenerate not just soil through better agricultural practices, but also to regenerate, to restore wetlands and to regenerate marine ecosystems by having no fishing zones. That should probably cover at least half the ocean, so that the ocean can recover.

You know, I'll maybe take it just one more...add one more thing to the water paradigm. Just that...it's as the Standing Rock people said, "Water is life." If we do not respect the water, then life will not thrive.

And I really can't say that the main focus should be water because everything's interconnected. To heal the water, you have to heal the soil. To heal the soil, you have to respect the plants. You have to allow biodiversity to thrive. You can't do monocrops anymore. You can't just extract anymore. You have to look at land as a being and say, "What do you want?" You have to listen and observe. You can't stamp a formula. You can't make a template that works in one place and apply it everywhere else. The industrial mindset does not work for earth healing. You can't send drones out with tree seeds and plant them willy-nilly everywhere. How do you know that that's the right tree for that spot? How do you know that? Even if it's the right tree for the next valley over, how do you know it's right for that valley? And how do you know it's right for that spot on that valley?

I can answer that question, "How do you know it?" You know it if you've been intimately familiar with that spot. If you've observed the land for decades or generations and you know those trees like family. Then, you can be a caretaker of the land. Some people are kind of savants in this, and they don't need decades or generations. But that's the mindset. They at least start with that question, "What wants to be here?" From that mindset, miracles of healing can happen. And that mindset, I'm going to say, that is contrary to the scientific reductionist worldview that says that: there is no wanting outside of humans, and maybe at a rudimentary level animals at a more primal level, wanting. There's nothing that wants to be here. That's a projection. Land doesn't want, land doesn't dream.

But I think that we have to begin to see land as a wanting being, to ask that question. What does the land want? What does the water want? What does the forest want? How can I participate in that? How can I serve that? How can I be part of a transition? To a state of being that includes all of us. That's beautiful, in which all life benefits, not some life at the expense of the rest. Knowing that we're in this together.

Climate 4.2 - What are the Organs of Gaia?

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So I speak about the organs and tissues of Gaia. And by that I mean forests, wetlands, all ecosystems, all biomes, as well as individual species and types of animals like whales, for example, forests or oaks or trout, salmon. Every species and every place on this planet and every type of place, every ecosystem is one of the organs that plays an essential role in maintaining the resiliency and the health of the collective of all life on Earth. And the ways they do this are so complex that I think we probably understand maybe 1 percent of 1 percent of it or even less.

It's recently come to light that whales and fish are responsible...and it depends on which study you read...for up to half of all of the layer mixing in the oceans. That's really important because the nutrient-dense, cool water has no way to rise to the surface to feed life except in certain spots in the ocean where it naturally happens. But if it were just up to the winds and the currents that are subjected to geomechanical forces, there wouldn't be nearly as much of this layer mixing as there is thanks to life, especially big schools of fish and whales who dive down into the depths and come up and their kinetic action mixes the ocean layers. Which is really important because for life to thrive, it needs the nutrients that are in the deep ocean. They have to come up somehow. And if they don't, then not only does the surface layer get warmer and warmer, leading to all kinds of disruption (possibly even that's a factor in coral reef bleaching), but also there's no nutrients available on which to base the food web. So here's an example of how, again, life creates the conditions for life.

Another function that whales exercise is that they transport nutrients across great distances from the depths to the surface. Carnivorous whales sometimes feed very, very far down on as much as a mile underneath. And then they come up and they rest and they poop, you know, and they bring the nutrients to the surface, but also across the oceans where the whales feed in nutrient-rich feeding grounds and then travel to warmer areas where there isn't upwelling deep water. And there they have their young, so they physically transport nutrients to those areas. And it turns out that wildlife in general plays a huge role in transporting nutrients into the continental interiors too. Megafauna and birds and other creatures, they perhaps feed in the ocean or near the ocean where they swim and then they swim upstream, in the case of salmon, bringing nutrients from the ocean to the interior. Or they fly or their migration patterns allow plant life to thrive because it needs phosphorus, it needs nitrogen. Brock Dolman told me that half of the nitrogen in California forests was from...originated in the ocean carried inland by salmon, which then are food for the bears, which then run off into the forests and pass their dung. Or eagles or whatever, eating the trout or the salmon that carry nutrients from the sea. So when we build dams and we calculate the carbon savings from that so-called clean electricity, I mean, are we taking that into account? Are we taking into account the lower forest resiliency and increased susceptibility to fire that comes when they're not getting these important nutrients from their marine origins.

And so there's a forest fire and it releases tons of carbon and exposes the soil to erosion, which releases even more carbon. Do we calculate that? So, a really solid environmental policy has to include this kind of knowledge. And we have to understand that we can't understand it all. Sometimes we might luck into one of these chains of of cause and effect, you know the effect of bears scratching trees or of salmon swimming up river or whales transporting nutrients. But that's just scratching the surface. We can't map out everything. But what we can do is we can start with the premise that all of these beings are somehow contributing. They are important. We can't just say, "Oh, well, this one's not important because there is no obvious carbon impact there. So that's not going to be part of our carbon budget and not going to be part of our decision-making. So, we can sacrifice those because they have less of a carbon impact." We can't do that. When we understand that earth is alive, we have to respect and take care of all of its audience. And I would even go farther than "Earth is alive." You know, if I stick there, then I'm still scientifically acceptable. Gaia theory says if not, "Earth is alive," at least it says, "Earth is like a living being in important ways, maintaining homeostasis," for example, over eons, maintaining a fairly constant

temperature despite increases in solar radiance, maintaining constant salinity of the seas, despite more and more salt flowing into the sea from the land through dissolved minerals. What keeps it from getting saltier and saltier? Enough salt flows into the oceans to double its salinity every 60 or 70 million years. Something's taking the salt out.

So, there's many, many ways that Earth maintains homeostasis. So we can say that Earth is like a living being to say it is alive, that is another step. And to say that Earth is conscious or intelligent, that's another step still. And I'd like to take that step. Why not? I don't have anything to lose. And it corresponds to information that I and many other people get through other ways of knowing besides the scientific way of knowing.

So looking at whales through that lens, what about their songs? What about their communication that travels over hundreds or even thousands of miles that links the entire ocean into a neural network, into a giant brain almost between the whales and the dolphins and involving all the life there. What's going on there? Could it be that that somehow the whales are organized or called to bring nutrients to where they're really needed? Could that be happening? There could be communication going on in the oceans between the land and the ocean. That just defies our comprehension. Or, what about the soil? The myelium, which which is more complicated, more complex I should probably say, than brain tissue and uses all of the same neurotransmitters in a constant web of communication. What happens when we cut a road through that? What happens if you cut your hemispheres from each other and then cut off little parts of your brain and prevent them from communicating with each other? Do we even take that into account when we build a road through a forest? The entire continent used to be connected in one...well, at least, you know, maybe not across rivers...but pretty much the entire eastern half of the continent at least was was one living network of communication. And is that just a random chemical cascade?

I have to say that I have no way of knowing that, but when I step more and more into seeing the world as alive, then it becomes conceivable that it is intelligent as well. Which of course coincides with the viewpoint of pretty much every indigenous culture that's ever been on earth. They saw themselves as surrounded by beings. The world as a being. The soil as a being, the trees are a being, the wolf is a being. Collectively, it is a being. And individually they are all beings. They were not alone here. And if something is being, then it's worth respecting. There is something to respect. There is something to love. It's not just anthropomorphic projection of beingness onto something that we then naively, childishly love even though it's just a thing. I mean, that would be pretty childish to love a thing. But if it's a being, then it's something that's worthy of love, that is even rational or thinkable to love.

If we want to motivate our efforts to protect Earth on something other than self-interest, something other than making more clever use of Earth and its resources, we have to go there. There has to be something to love. Otherwise, it seems kind of irrational, not serious. Which might be part of the reason why for something to be in legitimate policy conversation, it has to be somehow framed in instrumental utilitarianism, in self-interest for human beings. Otherwise, it seems like a bunch of kind of hippie woo-woo imaginary stuff. If you grant that earth is just stuff, then it is irrational and a fantasy. So, we need that foundation. We need to begin seeing Earth and all of its beings as beings. I can't emphasize that enough. Without that, we're just left with being more clever about serving our interests.

We need a mental model to coincide with our heart's longing and our innate love of life. Because on some level we all know this. This indigenous knowledge is in all of us. So yeah, that's why I find it really helpful to look at some of the ways in which Earth is alive and acts and has a physiology and perhaps even has things that we could call a mind. That those pieces of scientific evidence reinforce my....like I would believe it anyway, but it really helps to have these allies so that heart and mind no longer need to be in conflict.

Climate 5.1 - The Importance of Carbon in Global Warming

Climate: Inside and Out
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(I'm just going to start whole thing again....)

Most of the conversation about carbon today is about fossil fuel emissions. And most of the energy of environmentalists, in the climate movement especially, is to find ways to reduce carbon emissions so that we can prevent runaway global warming, etc., etc.. What has been left out of the conversation to a large extent...not entirely, and it's actually coming more and more into the conversation, which is a really hopeful sign...is the role of forests and wetlands and soil in sequestering carbon, taking carbon out of the atmosphere, and restoring a healthy carbon cycle where whatever carbon is produced, it is reabsorbed again.

What I have learned in this research is that the contribution of what is euphemistically called "land use changes" to atmospheric carbon is at least as much as the contribution of burning fossil fuels. Exposing soil to oxidation, exposing it to erosion puts tremendous amounts of CO2 into the air. And the ruin of the biological systems, the living forests and grasslands, that prevents that released carbon from being brought back into the soil. Because when trees and grass and other plants uptake carbon from the air to build their cellulose...you know, to build their build their bodies...some of it goes into the the aboveground parts which eventually fall down and rot and get released back into the air. But a lot of it goes underground, taking the form of organic compounds, which means carbon containing compounds, glomalin and other compounds that form soil, and that stay underground in the soil...it could be for a year, could be for a decade, could be for 100 years. Some of them are deeply sequestered in the soil, so they're constantly pulling carbon out of the air and putting it underground.

So much so that, yeah, carbon dioxide levels in the atmosphere have been rising steadily over my entire lifetime, over a couple hundred years, but they've been rising slower than would have been expected in models that are based on how much we're emitting. Despite those models underestimating the amount emitted through land use changes. The reason that they increased slower than expected is because plants are taking up more....the more that there is in the atmosphere, the more the plants take up. Of course, they're not increasing their uptake fast enough to offset emissions, but it points to the capacity for life to maintain atmospheric balance. If we're not getting in the way, (unfortunately, we're getting in the way) something like like half of...today, I think we have something like half of the trees that we had before civilization. We've lost vast amounts of topsoil. The entire prairie has been turned into cultivated land. Half of the mangrove swamps of Asia have been destroyed. Eighty percent of the seagrass meadows on the New England coast are gone. You can go down the line. These organs of Gaia that maintain a healthy carbon cycle have been destroyed. If they were all healthy, we still had all the wetlands, the peat bogs, the mangroves, the virgin forests, rising emissions may not even be that much of a problem. But that's a moot point because we have rising emissions and we have degradation of the regulatory organs of the planet.

So, what are we gonna do about it? Yeah, I think we should cut emissions, but that is maybe harder to do because we're so locked into it. All of our systems are so locked into it. That might be harder to do than to draw down carbon. And I'm using Paul Hawkin's terminology here: drawdown. And this is a great contribution of his work that shows that the potential for taking carbon out of the air through regenerative agricultural practices...regenerative because they regenerate soil and the water table and biodiversity. Because they regenerate soil....healthy soil is made in part from organic molecules, from carbon. So, the potential is just tremendous.

I have examples in my book...and in my research is by no means thorough...of farmers who are building topsoil at a rate of half an inch or an inch a year, which in my youth we learned in school that it takes five hundred years to build an inch of topsoil. But there are people who are doing it 500 times faster than that. And if these practices were adopted on a global scale, according to some estimates, it could offset all emissions. We could begin drawdown like right now. But we would sacrifice agricultural productivity,

right? No, actually, these methods can be as productive or more productive than chemical-based agriculture. What they do require...there's two things, though, that they do require that represent a profound disruption or a profound shift in our agricultural system and our entire society.

The first is that they are more labor-intensive, overall. We would have to have... The United States...right now, approximately 1 percent of the population is directly engaged in farming. That might have to go up to 10 percent as it was in 1950. And maybe if you include gardens, maybe go up to 50 percent. So a lot more people would have to have their hands in the soil. And that goes against this conception of progress, which is conceived of as a...

(I'm going to wait for this helicopter to pass.... There's progress flying right over our head right now.)

Yeah, so progress has long been conceived of as a transcendence of labor and of dirt. The lowest social class two thousand years ago was the one that had their hands in the dirt and their feet on the ground. And the highest social class was carried in a litter above the ground. Pharaoh's feet were not even allowed to touch the ground lest he be soiled. And today we still have the veneration of those who work with abstractions. They have the most wealth and power and status in society. The scientists, the people working on their computers, the financial wizards in a world of digits. That maybe needs to be reversed to give more, not just status and reverence for those who work in materiality and work in the soil, but more money, too. So it involves a different kind of agricultural economics. That would be beyond what I want to talk about right now. But that's one big shift that would need to happen for us to really have a drawdown agricultural system.

And the other is that regenerative agriculture in all of its forms...some involve horticulture, some involve animal husbandry, various kinds of intensive grazing practices...these are not cookie cutter formulas. What works in one place may not work on another continent or even in the next valley over. The only way to make them work is to be a patient, attentive observer of nature, of that particular land so that you know it really well. And you ask, what does this land need? What does the soil need here? And you try things and maybe they don't work and you realize, oh, that isn't what it needed. But now I understand a little bit better. So it requires an ongoing, intimate relationship that is unique between the human or the humans living on that land, interacting with that land and the land itself.

That does not fit into an industrial model where you standardize practices. The essence of industrialization is standardization. That's what makes it efficient. That's what allows a machine to do it. So in order to have a truly regenerative agricultural system, we have to undo that way of thinking. And that's another reason why we need more people in close relationship to the land. If we do that, then the potential of these agricultural technologies is just tremendous. It would mean that carbon dioxide is really not a problem anymore.

And it's not just agriculture, also. More generally it's the relationship between humans and other living things. So in some places it's about growing food. In other places it's about restoring the water cycle through building check dams or reintroducing beavers to an area to slow the water down. I think I might have said before in the discussion of water, water is not supposed to be running in these deep channels. It wasn't historically. So people can intervene and where they can try to understand...maybe there is an invasive species here and maybe some of them are coming as a healing response because the land has been damaged and it invites so-called invasive species in other places. Maybe that's not true. How do you know? There's a big debate among restoration ecologists and kind of the new ecologists and, you know, our invasive species. Good or bad? And do they serve a purpose? And what's the best response? And do we just try to kill them using all kinds of herbicides and things? This is a big debate in a certain sector of the ecology. And maybe there is no formulaic answer to that. Maybe the answer is unique to each place and not black and white, and requires again an intimate relationship and long observation and drawing on maybe generational knowledge and indigenous knowledge to know what serves this place and how that changes over time. What's served it two hundred years ago may be no longer relevant.

So there's no formula here in the healing process that we want to participate in. In some places it might be to keep humans entirely away. In other places, intervention might be needed. In other places, the most

important thing might be to to protect indigenous people who have been taking care of that place for hundreds or thousands or tens of thousands of years.

So, coming back to carbon. Obviously, this is a lot bigger than carbon, carbon is more of a lens or a barometer. We can understand that if carbon is going into the soil, out of the air and into the soil, then probably something good is happening in the soil. So it is...and you can measure...this is something you can measure, although it's not easy to measure. And in fact, one reason why carbon sequestration has been less prominent in the public policy conversation about about global warming is that it's harder to measure. It's harder to put into a carbon budget. It's harder to put into a computer model of the atmosphere. So it kind of gets left out. It's relatively easy to assign a carbon tax to fossil fuels. But it's not so easy to pay carbon farmers for the amount of carbon that they're sequestering because it's complicated. Some of the carbon oxidizes within a year. And it goes back into the air. Some takes 10 years. Some takes centuries. Some are sequester very deeply. How do you know? How do you measure it? Carbon assays, soil assays usually only go down at most a meter, sometimes less. But some other carbon is being sequestered much more deeply and it might be different from one spot to another spot. And how do you standardize that kind of thing?

So here's an example of our basic solution template that we enact as a culture of standardizing and measuring. It fails us. We need a different approach. And that approach is grounded in a living system view that understands the uniqueness and the relatedness of all things.

Climate 5.2 - The Secret Life of Trees

Climate: Inside and Out
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There's been a lot of research on the ability of trees and forests to sequester carbon, and how much they can sequester, and different types of forest, tropical and temperate and so on and so forth. And this can be used to argue for the protection of forests or for sustainable logging practices and so forth. But again, the danger here is that when we gage forest health or when we instrumentalize forests based on carbon, then anything that doesn't have an obvious carbon impact gets left out of the equation. When we...and those could be the things that allow forests to be healthy over a time span of centuries.

When we understand that a forest is a living being...not just composed of living beings, but a living being, an entity in and of itself, then we can't be so cavalier about, say: "cutting down trees and hauling them off and building buildings with them. And hey, boy, that's taking a lot of carbon. I mean, once it's in a building that carbon is in the wood, it's going to stay there for maybe centuries so this is good for the atmosphere, right? So let's plant fast growing trees and log them and haul them off these tree farms." If you're only looking at carbon metrics, that seems like the most ecologically friendly practice. In the long term, though, the ability of these trees to sequester it underground or their effect on the water cycle or their effect on biodiversity, that gets left out. And in fact there's a lot of really deep work on forests, the book *The Hidden Life of Trees* (Is that what it's called?) gives some beautiful examples of how trees in a forest not only compete with each other for sunlight and ground, but they sometimes cooperate with each other and even form friendships where two trees will will grow in a way to give each other more sunlight and how stumps that have new leaves...they should be dead...they're kept alive by neighboring trees, sometimes for hundreds of years. Why would they do that?

From an animistic viewpoint, you could say, well, those are the wisdom elders. And when the forest is facing a one in five hundred year threat or a situation that no living tree remembers, maybe that memory is stored in that stump. That seems rather unscientific until you translate that into: there might be bio

chemicals that are useful and necessary when the plague of whatever insect comes by or some viral outbreak or something like that, that is held by the forest.

So, yeah, the forest and the mycelium and the bacteria and all the other plants and the insects and animals, all these together form a living being that is resilient over time, and if you damage it.... Tree farms are not forests, actually, they are not a living being. They are just like any other monoculture. They are seriously reduced...if they are a living being, they are a seriously reduced and depressed living being with almost no biodiversity. And they don't do as good a job in maintaining they don't do as good a job in creating clouds, bringing in rain or anything. There are....it's hard to grasp that in quantitative terms.

Yeah, another thing I want to say is: There are certain fungi that take hundreds of years to grow, that only grow on the big logs that decompose over centuries. What are the role of those fungi? Do, even recognize them? Do we understand that yet? Or are they just some superfluous thing? And the force will be fine without it. We thought that a lot about various creatures on this earth. Not to mention various organs in our bodies, that there are kind of natures mistake or something superfluous, and then later we learn actually that they're playing some really important role that may only become visible under extreme or unusual circumstances. The basic principle is that everything is there for a reason. And until we understand what that reason is, if we care about these places, we better not just go around destroying things.

Climate 5.3 - The Problem with Geoengineering

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There was recently a proposal by the United Nations to basically slow down the development of geoengineering, which was blocked by the United States and Saudi Arabia because actually petrochemical companies, they support geoengineering. They're fine with climate change being accepted because...and they're very happy with...really surprisingly, they're okay with the narrative that the biggest environmental challenge is rising levels of greenhouse gases. Because if you isolate and contain the problem in that way, then theoretically, if you find some way to remove greenhouse gases from the air through carbon capture technologies, for example...I mean, people are inventing all kinds of machines to do that. Or if you can counteract global warming by spraying the sky to make it lighter, to make it reflect more sunlight. Then you can keep on doing business as usual. You can continue burning fossil fuels. No problem.

So basically, geoengineering is a kind of...it fits right into the mindset of sustainability in the sense of sustaining things as they are right now. It prevents us from having to face any kind of deeper change, making any fundamental change in the way that we're living on Earth and the way that we're relating to earth. It's just adding another technology onto the pile of technology, increasing our control over the rest of nature. Mitigating or addressing the consequences of our technologies of control by adding even more control. So it's not actually a change. It's just more of the same, intensified.

Personally, I think that the climate crisis is asking us to make a change. That it is an initiation for our civilization and that these geoengineering schemes are going to bring the same results as previous technologies of control have brought. Which is a need for even more of it. Just as chemical agriculture creates the need for even more chemicals as weeds and insects develop resistance, as the soil gets so depleted that it needs even more and more inputs in order to grow crops. So each failure or limit that technology creates invites even more technology to compensate for the damage that has been done.

So geoengineering is of that same mindset, not a departure from the way we've been doing things. And that's why it is fairly agreeable to those whose job it is to guard the status quo, to administer the status quo. It does not...they kind of like it, you know...it's part of that engineering mentality that we were going to impose our will upon the earth. We're gonna make the entire planet into our engineering project. The result will be unintended consequences, as always, and these unintended consequences will be horrific.

What could possibly go wrong? I mean, I could say a couple of things that could go wrong: if we reduce....if we increase the reflectivity of the sky to sunlight, then we are locked into that forever, because as soon as we stop, then there is going to be a really rapid rise in temperature. So once we start, we have to keep going forever. It's like a nuclear reactor. Once you get it going, you have to keep that cooling system running. And if there's a tsunami or a power outage in the backup system fails and the cooling system stops, then kablooey! So you're you're kind of locked into this technological maintenance of the world forever. And, another thing that can happen is...like...well...let me just say that, that we have no idea what in a complex system with emergent properties and a high degree of non linearity, we have no idea what the effects of this would be. We don't understand even cloud formation that well. It's only in the last few years that we've understood the role of bacteria and cloud formation. We don't understand.

So by making these massive interventions.... These are basically massive experiments and we have no way of knowing what the consequences are. This is not to say that we never do anything in nature, that we never intervene. But as I was saying before, in the context of agriculture or permaculture, this requires intimate knowledge and and long standing observation so that we can begin to know. And it comes from the question: What does the totality want? What does the soil want...that includes all of its beings? What does the forest want that can include ourselves to the people who live there? Then that's a very different kind of intervention than to make industrial-scale, massive disruptions in the atmosphere. Or another proposal is to dump iron oxide into the oceans. Or there's various various proposals that are being actively researched, so.... And they sit comfortably in the way things are because if they work, we don't really have to make any changes.

Climate 6.1 - What Actually Makes People Care About the Environment?

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I talked before about the sadness that I felt, and especially my wife Stella felt, upon looking at the narrow river estuary and the places where there used to be so much life and it's not there anymore. And our sadness was not because we made some kind of mental calculation that location no longer sequesters as much carbon and that therefore our future is going to be a little bit more in peril because of a lost carbon contribution. Just as the sadness that you feel when you see your childhood woods bulldozed or when you hear of a species going extinct or when you look at the pits and quarries and the tailing ponds of a strip mine or of a mountaintop removal operation or the devastation caused by tar sands excavation or those birds covered in oil struggling up onto the shore from an oil spill.... That hurts. And it's not because you make a calculation that, oh, boy, this is going to add more carbon, and according to the models in 30 years or 50 years, that's going to mean this, this and this. There's a more visceral impact of these things.

We are sad and in pain from the damage because we love these beings, and I think that this is a much more potent invitation to environmental action, to action, to protect and restore the places of this earth than appealing to a theoretical projection of what's going to happen in 10 or 20 or 30 or 100 years. That's not as motivating for a lot of people. And it requires them to buy into a politically charged, politically loaded position on climate change.

I ran into somebody a few weeks ago whose brother is like this conservative Trump supporting anti-immigrant, whatever, whatever, you know, he like doesn't believe in climate change. (Actually, I'm not sure if he's anti-immigrant. I'm just kind of elaborating here, embroidering it.) But what this woman said is that he does not believe in climate change. And he's a rancher and he's transitioned to using Allan Savory methods of holistic grazing and building huge amounts of topsoil. And he's not motivated by climate change. He's motivated by the health of his cattle and the health of the land. And the soil is getting better. And springs that have been dry for 30 years have been returning. And the songbirds are coming back. And he's using less chemicals and he's actually doing better economically. And, like, he doesn't need to believe in climate change to do probably more than everybody listening that's put together to draw down carbon.

So, this just illustrates that maybe attaching so much to the global warming narrative, to the greenhouse gas narrative, may not be necessary and may actually bypass what actually motivates people to do things that are in service to life. And this is not to say that the theory of global warming is wrong. I'm not saying that. And if you are making a mental calculation of which side I'm on, "Can I trust this guy? Is he on the denier side or is he on the side of right and reason?" Then you're missing my point. And missing the larger point of the perils of war thinking. And of the first question being, which side are you on? Because maybe, as I said before, maybe there are hidden agreements among all sides, among both sides of the polar spectrum that need to be challenged.

So one of those assumptions that I want to challenge is: How do we motivate people to care and to take action? And to answer that, you might ask: What motivated you to become an environmentalist...if you are one, maybe you don't identify that way, but if you are one, as I believe myself to be...what brought you to that? Was it that you became afraid for our future? Or is that an acceptable reason on top of something that's much more squishy? Maybe the truth is that even if our future weren't at stake, you would still want to save the Amazon. You would still want to stop the new road and stop the bulldozers and protect the fish. Protect the trees. Why? Because you are a tree hugger. You are birdwatcher. You're a butterfly lover. You like to touch turtles and look at turtles. What if we embrace that? What if we recognize that what motivates people is an experience of love and connection and an awareness of beauty and of loss? Feeling grief for what's being harmed right now. And not to persuade them to trust the scientific authorities to believe what's going to happen in X number of years if this invisible substance called carbon dioxide, methane, etc. increases in its concentration. That's relatively hard sell compared to the tangible damage that's being done here and now.

People make sacrifices for what they love. If you know that your actions are harming one of your loved ones, then that's going to weigh heavy on you and you're going to want to change. And many people do make courageous choices putting themselves at risk for the sake of their loved ones. We are going to have to make courageous choices, everybody, in order to come into alignment with the healing of this planet. We have to recognize that.

Where does courage come from? The word itself suggests the answer. Courage, meaning heartfulness. It comes from love. We have to understand that politicians, that energy company executives, that lumber company executives...everybody is going to have to make brave choices. It is brave for a corporate person to try to push their corporation to be a little bit more ecological. It's brave for the corporation to make that choice when it seems to conflict with the bottom line. What's going to happen to our market share? What are the shareholders going to say? And so on.

So, this is an important question that we have not been asking. The question being: Where does courage come from? And it comes from connection to what we love. So, yeah, a lot of the climate strategies are...they do have some understanding of this, that's why they use pictures of polar bears and stuff like that, but then divert that energy into something that is global and abstract and long term. And I think that, on some level, people don't really believe it. They might say that they believe it, but most people don't believe it because their lived experience is not telling them that the climate is really getting worse. Life still goes on. It has not affected them in the ways that they can recognize.

You can ideologically say that forest fires and droughts and hurricanes and floods are caused by climate change. But that requires buy in to theories that, I have to say, are overhyped. I can't say whether they are wrong. But, as I said before, a lot of what is blamed on global warming is caused by more local and regional disruptions in soil and water, forests and so forth. So do we want to peg our hopes to convincing everybody about climate change when there is another way, a way that coincides coincides a lot more with with what actually motivates us? Tree Hugger, what motivates you? What happened? It was probably an experience. You fell in love and that love and the potential for its awakening lives in all people. We need to provide conditions for its awakening and then avenues for its expression. And not let it get sidetracked by various ideological positions.

But there are there are things that people can do on a small scale, on a local scale, on a regional scale, that then contribute to change on a global scale. I'm not saying that global level change is unimportant or unnecessary. We do need global agreements...to...so that we can cooperate. You can't have everybody withholding from polluting the earth in everywhere except for one place that's doing all the pollution and then exporting their things everywhere else. That's not progress.

So we do need global agreements, which we do not really have at this point. The global agreements we have are mostly free trade agreements which actually run counter to ecological health that allow corporations to sue governments for harming their profits if they institute environmental regulations. And these cases are adjudicated by unelected commissions with industry representatives appointed to them and stuff. It's pretty dark. So I just, you know, when I call for local action and care for the places where we are and the nourishment and protection of the organs and tissues of Gaia that are this forest and this river, like, I do want to invite us to put our energy and attention to that. But it's not to say that we then should completely ignore political engagement. That's important, too. But the political engagement needs to come from a recognition of the importance of the local and allow us to act without external interference in the ways that serve each place.

Climate 7.1 - What World Do We Choose? Rewriting Our Stories

Climate: Inside and Out
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The dominant narrative that I'm hearing today, again and again, through the youth climate strikes and all this kind of stuff, is that we have to change or we're not going to survive. We're gonna.... We've already overshot the ability of the Earth's ecosystems to support human civilization, and we better do something about that right away or we're going to have catastrophe, massive population collapse, maybe even human extinction. It's as if....our...as if the crisis is going to save us from ourselves. As if we're gonna have to change right now. We no longer have a choice.

But what if we do have a choice? I began thinking about this when I read a critique by J.B. MacKinnon (he's a Canadian writer) of Jared Diamond's description of Easter Island and and how he wove that into the overshoot and collapse narrative. So you may have heard the story...and it's not just J.B. MacKinnon, there are other writers too who have questioned this...but basically the Jared Diamond version of the story is that Polynesian settlers arrived at Easter Island...I can't remember, a thousand some years ago....and built these stone monuments and exterminated all of the wildlife. They killed all of the all of the fauna there...and by the time that they were...and they had a big population boom but then because they destroyed the ecological basis of their civilization and cut down all the trees and basically made the whole place into a barren wasteland, by the time they were discovered by Captain Cook in the 18th century, their population had dropped again all the way down to a couple of thousand. And they were living a meager, bare existence on rat meat, which was basically the only animal left. And these gardens that they eked out amidst the volcanic rocks. And it's an object lesson for us with our monuments, and using up all

of our natural wealth for a temporary population surge and a temporarily grand civilization soon to collapse into bare subsistence.

So anyway, there is a rewriting of this history that draws on archeological evidence and says, actually the population never did peak at that level. It stayed pretty constant, even though the ecology was severely disrupted, mostly because of the rats that stowed away on the canoes of the settlers, the Polynesian settlers, that that destroyed the local fauna and disrupted the ecosystem and chewed the nuts of the trees and the fossilized ones that they find have gnaw marks on them from the rats and so on and so forth. And yet the people still found a way to live. They ingeniously made these gardens using, I don't know, seaweed and volcanic rock dust and stuff for fertility. And they maintained their population levels to the point where when James Cook encountered them, they weren't interested in the food that he offered to trade with them. They had plenty. They were more interested in the hats that he had on the ship and they wanted to trade for those. It was only after that, that the population did plummet because of the diseases that the Europeans brought.

So it's a completely other retelling of the story. But in a way, what it suggests is more chilling than the Jared Diamond story. It says that maybe we won't be saved from ourselves by environmental collapse. Maybe we will continue to thrive or in all measurable ways in terms of population, in terms of GDP, in terms of floor space per capita, in terms of BTU's expended per capita of energy, in terms of literacy...all the things that Steven Pinker uses as evidence of our of our ascent and our technological triumph...maybe these things can be continued on a world that continues to die. I call it "the concrete world".

Imagine a future where the entire planet has been converted essentially into one big strip mine and waste dump, where the dying of the trees continues. The dying of the whales, of the fish, of one species after another, after another, of one ecosystem, of the insects. This huge drop off in insect population that you may have noticed. It's not your imagination that there's less bug splatter on the window than when you were a kid. My father said, "Yeah, there used to be clouds of insects. We used to have to turn our windshield wipers sometimes driving at night."

This depletion of life, J.B. MacKinnon calls it “a 10 percent world”. And there's other books, too, that bring up these accounts from the first Europeans to come to North America of just how how abundant life was. We look out today if we see a pod of whales, that's pretty exciting. But there are accounts of looking out and seeing thousands of whales whose whose spume filled the air with mist. Of oysters, a foot across in the Chesapeake Bay. Of going fishing by putting a bare hook and you catch a fish in seconds, like scooping your hat in there and you have a meal. Like, that amount of wealth. Of horses going through the brush and their bellies stained with the berries. So a 10 percent world. And what if a 10 percent world becomes a one percent world in another few hundred years? And we continue to survive on a concrete world? Substituting for all that's lost with technological substitutes. Making oxygen, maybe with vats of algae or something like that. Drawing down the carbon to maintain atmospheric equilibrium with machines. Enclosing our cities in bubbles. I mean we're already kind of doing that....everybody's house is climate controlled and getting air filters and stuff like that and water filters.... Like, what if we could survive in a totally poisoned world, if we have the right filters? If we have the hydroponic factories to make the food or vat-grown meat and maybe we just leave Earth behind and go off into space.

What if we could do that? What's going to stop us? This is a more important question. What's going to stop us from doing that? Because in fact, we have been walking down that path for a very long time. What's going to stop us from taking another step and another step and another step down that path? Now, I'm not saying that we could do that. That we could become independent of the ecology. But so far, we've been doing a pretty good job of it. Population, longevity, GDP, literacy. All of these things have stayed steady or increased even as life has declined. So our experience up until now says maybe we could do it. So the question is, do we want to? And maybe we need to replace the rhetoric of "we better change or we're not going to survive". Because what if that's not true and what if people sense that that's not true? And they don't really believe it. I mean, you can read all the science you want. You can read about the methane feedback loop all you want. But do you really believe that we're going to be extinct in

20 years? Most people do not really believe it. If they really believed it for real, they wouldn't be acting the way that they do now.

So the important question then is not what we need to do to survive. The important question.... I think the question we need to be asking, not "How will we survive?". But, "What world do we want to live in?". To recognize the power of our choices, the power of our stories. The power of the story of "the world is alive". If we hold that story, we invite the world to be more and more alive. If we hold the story of the world as this dead thing, a source of resources, a dump for our wastes, we hold that story of "world is dead". We create a world that is dead.

Our stories are our most powerful creative tool. They are what organize people, what bring our labor and our creativity into coherence toward a goal. Our stories tell us who we are and why we are here. There are things that we need to do on earth right now that only makes sense if they're part of a mass movement to do those things. They only make sense if we understand ourselves collectively as: "why we are here right now is to contribute to the healing of this earth". And then, you know, you're not alone. You know that it's not fruitless. You know that you're doing your part. So this coherence comes from a collective choice, a collective intention to create a more beautiful world. It comes from the question, "What world do we want to live in? A living world where a dead world?" Do we want the concrete world? Where nature is dead, but it's OK because we have VR. That...with content, rich experiences and high-resolution digital displays of those nature scenes. Is that what we want? Maybe we can make it. Maybe we can do that. Do we want to do that? This is the question: "Who are we? Why are we here? What world do we want to create?".

I think that both futures are possible. I can see them. I can see the concrete world scarred and ruined. And I can see a more beautiful world, a flourishing world where the deserts are greening and the species are coming back and the oceans are full of fish. And flocks of birds cover the sky. I can see that world. And humans living peacefully on it. You can feel it, too.

That world exists. Which one are we going to experience in our future? Which one are our great, great, great, great grandchildren going to live in? That depends on which one we summon. I won't even say that we create it. That's not quite the right word. It's how we come into alignment with that future. It's as if many possible worlds exist already in a quantum superposition of timelines and the timeline that we orient toward through our choices, that's the one that we walk. That's the one that we arrive at eventually. And that means that every choice that we make individually and collectively is a kind of a prayer that aligns us with a certain reality and a certain future. It's a declaration of: Here is who I want to be. Here is the world I want to live in. We may not understand on a pragmatic level how that choice is actually going to change things, how taking care of that puppy is going to bring about a more beautiful world, for example. But if that choice is a choice for life, a choice for love, a choice to act on what comes to our care, then it is an aligning action with that beautiful world, that healed world that we can sense is possible.

I would like for the conversation to turn away from: Can we survive? How will we survive? That's not the goal of life. The goal of life is not to survive it. On a personal level, that's not the goal of life. It's not to make it to your deathbed intact. The goal of life is to create something beautiful, meaningful, to give your gifts and service to something much bigger than ourselves. You can feel that. When you're in that you feel alive. You feel like, yeah, this is what I'm here to do. You feel fully alive when you're in service to something that is beautiful to you, meaningful to you, that engages you. And collectively, we are the same way.

We're not here to survive this. We're here to contribute. We were created by Earth to contribute. We're not an accident. There is an evolutionary purpos that resides in the gifts that we've used to make such a mess. And when we ask, "Why are we here and what world do we want to live in?", we reorient those gifts toward that world, toward that purpose. And any other application of those gifts becomes intolerable. And it's so much more empowering to say, "What world do we choose?" Rather than, "How do we make it? How did we survive?" That's the mindset that's gotten us into trouble. How do we make sure that humanity makes it? Seeing the world as an instrument of some narrow conception of human well-being, which in this day and age has translated into more and more stuff. When human well-being is

denominated in terms of money or other measurables, it leaves out the bigger picture. It leaves out what larger thing that we can be part of. And it also leaves out what actually constitutes human well-being. These things we can measure are in large part compensations for what makes people happy. There's a limit to how much we can eat. A limit to how much we can grow. And we're still kind of caught in the growth phase.

The growth is supposed to end, and another kind of development begins with the end of growth. That other kind of development is a growing into our adulthood. It's our maturation. Which is identical to saying, or to following the question, "Why am I here?" It happens with adolescence too. The young man or the young woman wants to know why they're here. It's not good enough just to make a living and to survive. The purpose of the ecological crisis will only be fulfilled when it has brought us to ask those questions. Until then, it will not go away. We will make no progress and the earth will spiral closer and closer toward the concrete world. It's only when we embrace our participation in life. And understand that life exists for the purpose of life. To make the universe more and more alive. Only then will we make the earth more and more alive. Because that's why we're here.

Climate 8.1 - Can We Actually Feed the Planet Regeneratively?

Climate: Inside and Out
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One of the technological myths of our time is that industrial agriculture - the regime of fertilizers, herbicides, insecticides, and so forth, called the Green Revolution, has enabled us to feed a hungry planet. In the book I go into some of the critiques of the idea. For example, that traditional, small, peasant farms in Turkey, there was a big study of them showing that they actually out-produce larger, mechanized farms. Such observations have been made around the world. Not to say that agriculture can't continue to develop and cross-pollinate with agriculture traditions in other places and so on, but really what so called "advanced agriculture" enables us to do is to maximize the yield per unit of labor, not necessarily yield per land unit. But to have high yield per land unit you have to have a lot more labor.

I did talk about that already; the need for a revaluing of the kind of work. Which is already happening. A lot of people are gravitating toward - they want to have a garden! So many young people now want to be farmers, they want to go back to the land. And in fact the number of young people going into farming is increasing again after probably a hundred years of decline. The answer [to the question], "Can we feed the world with organic agriculture?" is yes! It's just a myth that we can't do it. But the system does need to change.

I hear sometimes people say that organic agriculture is an elite indulgence because we couldn't feed the world that way. That is only true if you take for granted the current agricultural system. If you try to grow a little bit without herbicides, without pesticides, it's a niche. But it doesn't have to be a niche. But that requires just a massive change on every level which is starting to happen. The food movement is one of the most powerful change loci right now in the world.

Maybe one more piece is food waste. When we don't hold life and Earth and nature as sacred, then we can become very careless with it. When we have a large scale, centralized, industrial scale agricultural system, then a lot of food goes to waste. Much more than if you're growing food in your garden and you

really put everything to use. The closer you are to your food, to the source of your food, generally speaking, the less that you waste, because there is a lot of waste in each step of the commodity food pipeline. There's waste at the harvest level, at the processing level, at the supermarket, at the table, and so forth. So since something like 40% of all food is wasted, we could certainly feed a lot more people with less food if we have a shift in our values.
And I'll add one more thing. You know, I'm talking about "organic" agriculture - organic really has become a shadow of its former self and has in many ways betrayed the original spirit of organics put forth by Rodale. He used the word organic because of soil. Healthy soil has a lot of organic matter in it, carbon containing compounds. So today you can grow food hydroponically with no soil whatsoever and still call it organic. Rodale is probably spinning in his grave about that. And I'm not saying that hydroponics have no role or anything like that. But when we're talking about regenerative agriculture, we are talking about organic in its original sense. To put wealth, fertility back into the soil, which is the basis of all life, on land at least.

A lot of the studies that compare the productivity of organic agriculture to conventional agriculture are deeply flawed, because to make something into a rigorous study, you have to hold variables constant and you can't do that with true, with deep organic agriculture. You vary your practices on every field and in every season. If you really wanted to put organic agriculture to the test, you would have to use fields and crops grown by people who have been in relationship to the land for decades or generations. You can't just take one field and say, "Ok, we're going to grow organic in this field and conventional in that field and they're pretty much identical." Because that test field that you're comparing with the conventional field, has that been farmed organically for a long time? Has the soil been built up through trial and error and relationship over decades, over generations? What organic is, you can't separate, it's not just a set of practices and not using certain chemicals. It is a relationship between humans and soil, between humans and land. So really, we don't know how productive non-conventional farming methods can be. There are some anecdotes where people are producing just enormous quantities of food on small acreage that point to what's possible. But if your goal is a healthy, restorative relationship, then you're not going to try to maximize production. So we don't really have a lot of good data to answer the question, "Could we feed the world with small scale, local, organic agriculture?" But I think there's a lot of reason to believe that we could. So the critique that we can't make this transition because we wouldn't be able to feed everybody is based on an ideology, really. It is not supported by the evidence. Let's put it that way.

Climate 8.2 - What Can We Learn from Indigenous Knowledge?

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One book that an influence on my thinking is called *Tending the Wild* by Kat Anderson that says that this pristine wilderness that the European supposedly discovered, where the native people were just kind of living off the land, this is a myth. In fact, the land was formed through a long relationship between the indigenous people and the places where they lived that altered the environment in ways that increased its production of food and its suitability for humans to live there. So in California (a lot of her work was California) studying the oak savannahs that were maintained through controlled burning and management of water and all kinds of other things that allowed this cornucopia of so-called wild foods to be sustained, to be produced and sustained. So the division between hunting and gathering on the one hand and agriculture on the other hand is not so clear cut as one might think. And in fact, this continent wasn't really

a wilderness in the sense of being untouched by human beings, as if these people hadn't the wits to co-evolve with their environment.

That said, there is another ideology that upholds indigenous people as being uniformly perfect in their sustainable practices. And there's questions about that. I've read historical accounts from native people in eastern United States talking about the disappearing game because they're hunting it too much in and population growth and so forth. And really, even in North America...also in South America, all over the world...hunter hunting and gathering societies eventually gave way to agricultural societies, which committed the same kinds of ecocide in most places on earth. So it happened in North and South America as well. So I don't want to idealize indigenous people. However, I think that we have a tremendous amount to learn from their deep, close relationship to nature.

The things that they were able to see and recognize are sometimes at a level far beyond what science can see and recognize. And we can respect that knowledge and and and gain from it and allow a lot of it to inform our practices without having to idealize it.

Climate 9.1 - Will We Have to “Make-Do With Less” to Sustain Life?

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When we talk about sustainability, there's an implication there that is present in the question, "what is it that we want to sustain?" "Sustainability" was coined as a term to be more palatable to the establishment. It seemed more scientific and less tree-huggy and less hippy to talk about "sustainability" and the need to to have a world that we can continue to live in, that can be sustained. Systems that can be sustained. But for me, it brings up the question, "Do we want to sustain the systems that we have?"

A lot of the discussion around climate, and especially energy, is basically taking for granted that it will serve human well-being to continue most of the systems that we have operating today that are highly energy dependent. Our agricultural system, highly energy dependent. So if you assume that this is the only way to feed the world, then we're going to have to keep producing a lot of energy. If you assume that our medical system (highly energy dependent) is the best way to maintain human health, then we're going to have to continue to produce a lot of energy. If you assume that our current patterns of living, where everybody has their single family home and a big yard, is unchangeable and desirable then we're going to have to produce a lot of energy.

But I would like to question those assumptions from the viewpoint not of, "well, we've been too greedy, we've used more than our share, we're going to have to make do with less," but rather understanding that these have not really benefited us. And in a sense, we're going to have to make do with more. By changing these systems, we're going to enhance our happiness, our joy, our well-being, our health.

People are not happier in far-flung McMansions in these vast suburban tracts where they have to drive everywhere for everything, where they don't have any friends within walking distance, where people are never outdoors. They're not happier in those settings than they are in a traditional Italian village where there are old men playing chess or drinking coffee out on the street and street musicians and kids running around and everybody knows each other. Where would you like to live?

We're not talking about a downgrade here. We're not talking about a lower quality of life when we build communities that don't require hour-long commutes, that don't require us to drive everywhere, where we have walkable cities and bikable cities. This is not a downgrade. It is not a downgrade to grow some of

your food in your garden. People do that for leisure. People feel like they don't have enough time. They would love to do that. It's not a downgrade to maintain our health with holistic practices, with herbal medicine, with nutrition, with all kinds of modalities that are outside the purview of technological medicine. We can be healthier that way.

So really, it comes back to the question of, "What kind of world do we want to live in? What kind of lives do we want to have?" And to recognize that this is not working. It's not working for the poor especially, and it's not working for the rich either. Their suicide and depression rates are just as high as everybody else's. So when we approach people as environmentalists, it's really important to be able to authentically say, I'm doing this for you, too. I want you to be happier. I don't want you to sacrifice. I'm not your enemy.

The things that I'm asking you to sacrifice on some level, you don't even want them. They are compensations for what's missing in modern life. And if we can bring these back into modern life, point to a pathway toward the recovery of these things, then we don't need to talk so much about sacrificing our quality of life. It's true that we are using more than the earth can sustain. But to what purpose? These piles of plastic, these vast junkyards, these monstrous homes where people spend most of their time in the breakfast nook and not in the cavernous living room? What purpose they serve?

So maybe we need to just get more serious about living a good life and recognizing where a good life comes from. Then naturally we come into harmony with the rest of life so that the rest of life can also live a good life. To believe that we need to sacrifice something important is to buy into the value system that holds those things to be important. And this transition is about a transition to a different value system. We hold other things valuable. And no longer aspire to more and more....more and more property, more and more money, more and more control over the world. Those things have not gotten us to anywhere with being.

I was in Brazil in a favela, one of the poorest places in Brazil. And I was walking with a local guy there and on the street, everybody was greeting him. And everybody was greeting each other and there were kids running around playing freely outdoors. And I said, "Man, in suburbia in the United States, in most places, people do not know their neighbors. You can look into a house and you don't know what's going on there. You don't know who these people are. Nobody knows you." And he was like, "Yeah, sucks, man." He was glad to live in the favela. And that's not to minimize or trivialize the poverty, the insecurity, the food insecurity and the way that the people there are being exploited. But they also had access to a level of joy that I do not see very often in North America. Could we imagine a world in which we have food security AND community?

Climate 9.2 - Do We Really Need to Control Population Growth?

Climate: Inside and Out
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Every once in a while, someone comes to me and says, "Charles, you've ignored the elephant in the room. It's population growth and it must be control our population, and nothing else is going to make a difference." Well, that....I felt like I had to address that in my book because it is such a familiar refrain that I've been hearing ever since I was a kid. I read Paul Ehrlich's book, *The Population Bomb*, in the 1970s, basically predicting mass starvation within the span of a decade.

So I started out, I have to confess, I started out being.... In writing this book, I started out being quite uncomfortable with that narrative because it is another kind of fundamentalism. It's another kind of reductionism: Here's the one thing that'll solve everything. And my research confirmed my suspicions. For

example, if everybody on this earth lived the lifestyle of a Bangladeshi villager, the planet could support at least 15 or 20 billion people. If everybody on Earth lived the lifestyle of a North American or an Australian, then two billion people would not be sustainable. OK. That's one data point that we should keep in mind, that how we live is at least as important as how many of us there are. The second data point is that population growth is slowing down rapidly in many countries, if not the majority of countries or close to it. Population is at below replacement levels, like, population is going to start decreasing in pretty much every industrialized country and in the developing countries...so-called developing countries...population growth is is rapidly decreasing as well. In some places it's like way below replacement level, like Japan, China, Taiwan, Korea, Singapore, Eastern Europe, most of Western Europe, Italy. It's like 1.2 Children per woman or 1.3 children per woman. Replacement level is a little over 2 per woman because half of those will be female. And so each couple basically needs to produce two children.

So then we can ask, well, why is population growth slowing down and pointing toward a peak, maybe in 2050 or 2060, followed by a long decline? And the pattern that emerges, it's not actually so much about access to birth control. The pattern is that when mortality declines, birth rates follow in one to two generations. So first, mortality declines, but people are still having lots of babies. That makes sense. If you're in conditions where half your kids die before they grow up and where people don't often don't make it to childbearing age, you know, then you're going to have a lot of kids. It's going to make sense to do that. And those cultural habits persist for a generation or two, even after mortality plummets. So you have a population surge in that transition zone and then cultural habits change. And it goes along with development and education and so forth. But I think really the main factor, according to some of the research that I looked into, by far the most powerful predictor is declining mortality rates. And that is happening around the world. So we're shifting from a high birthrate, high death rate society to a low birthrate, low death rate society. It's a steady state. And that brings up, again, the question. OK. So, if population growth is already slowing down, then the question of how we are living becomes much more important. Because like I said, if we have a steady state of 8 billion people, 9 billion, maybe it'll peak at around 10 billion, and then start declining, 10 billion is way more than enough to lay waste to this planet if we continue living the way that we are.

So I think that that's what we need to focus on and not so much focusing on the number of people on Earth. And the other thing is that this is a quantitative way of thinking. One of the themes of the book is, is that our obsession with quantity, with measuring things that fits so well into our problem-solving modalities or ways of addressing problems, that reductionism leaves out all the things that are hard to measure. Like this soil...the soil organic matter deep in the ground...like it leaves out the things that are hard to measure or that we don't even know how to measure or that are intrinsically unmeasurable. We like things that are easy to measure. That lends itself to magic bullet solutions. It's simplistic. Too much resource consumption, too many people. Solution: reduce population. And the ways in which we have done that have been quite brutal.

The population control movement has a continuous history that goes back to the eugenics movement and it was practiced on pretty much the same people that the eugenicists didn't like. Specially brown and black people. So there was all kinds of sterilization campaigns where indigenous people and people of color who didn't know that they were going in....when they went to the hospital, they thought they were getting an appendectomy. They thought they were getting birth control or something....and then they didn't know that they were actually getting sterilized. And this happened on a mass scale everywhere in the interest of controlling the population. So there's a really sordid history of this, that adds to my wariness of, you know, let's solve all the problems by addressing this one quantitative thing.

And, that said, I would actually prefer a world with fewer people. I like to go out into nature and not have a crowd of people visiting the same waterfall that I'm visiting. I think that it would be a lot easier to live harmoniously on this earth with maybe two billion or three billion people. We'd have more wild places. That's my preference, and that is maybe part of the conversation that humanity will engage in in the future. The question isn't, "How many people can the earth sustain and how much do we have to limit and control ourselves to survive here?" The question is, again, "What kind of planet we want to live in? What is the most beautiful vision of a future?" So, yeah, those are some thoughts on on population. And yeah, just to alert people to the fundamentalism that so often arises with the population conversation.

Climate 10.1 - The Connection Between the Economy and the Environment

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In conventional environmental discourse, there is a concept you'll come across quite often called "green growth" or "sustainable development" that says basically we can leave our fundamental economic system intact. We can have economic growth, but do it in a way that takes care of the environment as well. That is ecological as well. Now, I think in the long term, it's pretty clear that sustainable growth is an oxymoron. In nature nothing just grows and grows and grows. Things move in cycles, not in linear growth patterns or exponential growth patterns. Exponential growth is part of a larger cycle that usually includes some kind of a collapse.

So, I question the concept of sustainable development, especially when what "development" means is converting land, converting ecosystems, converting places, converting subsistence peasant agriculture into production sites to feed the global commodity economy, to feed global markets. That's what development means. When the World Bank offers a development loan to Venezuela or Ecuador or Colombia, it's to build some kind of infrastructure--roads, ports, power generation facilities--that allow that country to join the global economy. That's what development is. You participate in what is really the conversion of the world into products. So if that's what we mean by development, then sustainable development is an oxymoron. Just as green growth--the idea that growth can be ecological and persist forever--is an oxymoron.

This oxymoron, though...this isn't just like some dumb idea. It's actually necessitated by the kind of economic system, the kind of money system actually, that we have today that only works in the presence of growth. And that is essentially because money is created through lending at interest and in order for the debts that are generated through the lending of money to be repaid--to avoid mass bankruptcies and lay offs and economic depression--more and more money needs to be created. There has to be.... (This is going to be a lot here. It's better to read about this, but I'll just kind of breeze through it.). There needs to be continual lending opportunities, continual investment opportunities. And we can see that when economic growth stagnates that unemployment rises, that the concentration of wealth intensifies, and the system basically stops working. Which is why governments left, right and center all agree that economic growth is crucial to solving our problems.

We have a growth-addicted system. To change that, we...and I'll just say that is fundamentally unecological...we have to fight against a growth-dependent system in order to keep rainforests, to keep fish, to keep pristine places out of the development machine. There is an internal imperative to find more and more and more to grow into, to feed economic growth. And I think that as long as that economic system remains intact, environmentalists are always going to be facing a losing battle. They're always going to be swimming against the tide of money.

And we can see this play out all over the world. For example, Ecuador, which has lots of oil reserves, undeveloped oil, and the president of Ecuador, Evo Morales. He was like, hey, we don't want to develop this. Is that the right president? Sometimes I get Bolivia and Ecuador mixed up.... They both had very ecologically savvy presidents. Anyway, the president basically made the world an offer. He said, you know, we are willing to leave the oil in the ground, to not develop it, to keep our forests intact, if the world will give us just half of what we could make by drilling and exporting the oil. We'll swallow the other half. But at least compensate us for not drilling this oil.

And there were no takers. So Bolivia, I mean Ecuador, went ahead. And right now, there are Chinese oil companies that are developing oil fields in Ecuador. And it's not that they're greedy for that money. They are in the same boat as most countries on earth. They have to generate foreign exchange. They are in debt to the global financial system. It is hypocritical to tell a country like Bolivia or Ecuador or Brazil or pretty much any country on earth to tell them, "keep your forests intact, keep the oil in the ground, don't develop your pristine natural resources...BUT keep the money coming. Keep servicing those debts." And the only way you can do that is by strip mining and cutting and drilling. "But don't do that. But keep paying us.".

And that is essentially the situation, in some sense, that we're all in. All of us under pressure to make money in a system where money making is right is rooted in the conversion of nature into products. That's where the good jobs are. That's where the high paying jobs are, generally speaking. It's something that is going to contribute to the functioning of the economy as we know it.

Where that takes me is: we need a different financial system, a different economic system. And many people do name capitalism as the culprit in our world-destroying trajectory. And that's a loaded word, "capitalism", and it brings up the specter of its foil, "socialism" or "communism". But I think that this is, again, one of these polarizing debates that leaves the real issue untouched. Deep as the critique of capitalism goes, it leaves unexamined the question, "What is capital?" And actually, I'm sure, like you know, real Marxist scholars don't leave this unexamined, but in the popular conception of the whole thing, you know, we rarely ask, "Well, what is capital"?

Capital consisting of money and property is basically an agreement among human beings. Money is only valuable because we agree that it is valuable. We have a story that holds it in value. Property, too. It's only yours because there is a social agreement that says that it's yours. It's not attached to your body. The land doesn't know that it's yours. The car doesn't know that it's yours. It's an agreement. So capital is formed through human agreements and these agreements can be changed. So what capital is, depends on what we agree it to be. What capitalism is, depends on what capital is.

So the economic ideas that I work with involve changing what money and property is. Changing, for example, the agreements by which money is produced and distributed. I mean, I kind of like some things about capitalism. I like business. I like the entrepreneurial, creative spirit that comes through in business. There's something of value there. And I can also see how capitalism, especially on the corporate level and the global level, is ruining the earth. And part of that ruin is the growth imperative that's built into the design of the money system.

So it's hard to really lay all this out methodically in...whatever...20 minutes or however long I'm talking about it. But I'll just maybe mention two key reforms that could change the...could make money and economy no longer the enemy of ecology. And really, it is about making economy ecological. Ecology goes in cycles and flows. It's not linear. Money as we know it does not decay like everything else in the world. It grows exponentially. And leads us to think that if we can only attach ourselves to enough money, we would be immortal too.

If we made money decay like everything else, through a negative interest rate, it reverses a lot of the effects that money has in the world. And again, this is a more detailed argument than I'm prepared to make right now. But basically, a negative interest system allows lending at zero interest or less, which means that the economy can work in the absence of growth. It means that future cash flows are no longer less valuable than money right now. So that we no longer sacrifice the future for the present. It encourages long-term thinking. It reverses the concentration of wealth. Anyway, I'm not going to try to give an economics lesson right here, but I just wanted to mention that...just to give an idea of how simple and how utterly radical the change could be.

And the second thing I would mention is universal basic income, which gives people money whether or not they are contributing to the production of stuff and supports activities that are not quantifiable, that are not producing something that can be brought into the market, but empowers people to do the things that are meaningful and beautiful to them. Which, in many cases...it's kind of ironic...the things that we need

the most right now, there's not a lot of money in those things. So all the NGOs and the idealistic young people, they're scrambling for crumbs to just do the work that we need so badly. So, yeah, that's another piece of the picture is a universal basic income, which is becoming more prominent now. More and more people are advocating for that.

And I guess just on a more general level. Money is such a profound technology, such a powerful tool for coordinating human activity toward a goal, that it is impossible to have a healing planet without aligning the money system to that goal. The story of money is part of the story of separation today. It necessitates endless growth. It generates competition. It creates artificial scarcity. Because it's lent at interest, there's always more debt than there is money. So it embodies a lot of the core principles of separation, and so we need to change that. If we are going to have reunion, if we're going to have an ecological planet, if we are going to live in a story of Interbeing, the money system cannot stand as an exception to that. We need to bring it into alignment with the world that we want to see. It is inescapable. We cannot leave the economic issue untouched in our pursuit of an ecological and beautiful and healing world.

I am aware that some of the ideas I mentioned...negative interest and universal basic income...they seem outlandish. They seem like a half-baked idea. So if you want to dig into it, then you're going to have to read *Sacred Economics*, which is a book I wrote that really goes a lot into the nuts and bolts of of these proposals. Otherwise, various obvious objections come up if you're not familiar with these ideas: wouldn't it cause inflation or wouldn't people stop working if they had universal basic income? Or... There's all kinds of objections that arise and it seems like I must not have thought of that. And I'm not going to say that the plan is flawless. But these trivial objections are..... The thinking is not susceptible to these trivial objections. There's been a lot of thinking done by me and other people on these topics. So if you want to get deeper into the conversation, read *Sacred Economics*.

Climate 11.1 - Do We Really Understand Nature Better Than The Indigenous?

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When I talk about the water cycle, or I talk about the physiology of earth as a living planet and its organs and its tissues, that is a step beyond what is conventionally assumed to be the way that the planet works and the way that the climate is maintained. It's a step into saying that maybe we don't know after all. And you could take many, many more steps into that. I've had conversations with idigenous people and people who work with ingeigenous people, asking "What do you think is causing climate change? What do you think is the biggest threat to this planet, to maintaining a planet suitable for human habitation?" And they do not say it's fossil fuel and carbon emissions. They say things like, for example, Tu Dogan, who said, "The worst thing your society is doing is removing sacred artifacts from the places in Africa and elsewhere where they were ceremonially placed, and taking them away and putting them in museums in London or New York. Because we put those there deliberately.

They are part of the maintaining of a covenant between humans and the powers of the earth. They are part of a communication. And when we dig those up and take them away, this covenant is broken. And earth is no longer going to make things easy for us. So that's one viewpoint. I've heard Brazilian people, a woman I know who works with idigenous people in Brazil, and I've heard this from other sources too that, they say that the problem is you're taking gold from the heart of the mountains, the gold is the heart of the

mountains, it's the soul, and if you take that away, then how can the mountains make wise decisions in administering the land? Of course things are going to spin out of control.

I ran into a woman recently who works with a Kogi Mama, that's the name for a Kogi shaman, who came to California and said, "Wow, you've really got to do ceremony at this spot. If you don't, there's going to be forest fires, terrible fires." And he did ceremonies there, but he said, "You have to do them every week." And of course no one did them every week, and there were terrible fires. And he came back and he said, "I thought I told you to do ceremonies here. I'll do it again but you have to do them or the fires are going to be even worse." And again it came to pass. And a third time he made the same warming. And people were like, "How could they be worse?" And then the Camp Fire happened.

And then later the woman I met, she did some research and discovered that site that he had gravitated toward was the site of a genocidal massacre a couple centuries ago. And so his view, I guess, is that where there's been trauma, that really upsets the land and earth spirits that are in communication with humans, and that they are in disarray. And that the earth can no longer maintain a stable climate, stable conditions when we're not holding up our end of the bargain, and we're not doing the appropriate ceremonies.

This is a step way out into the Deep End from a normal climate activist perspective. But when I go there, and I think, from what worldview are such suggestions, such an orientation, from what worldview are they a matter of course, are they not ridiculous, but seem logical? And it is the worldview, simply put, that the world is alive. That's it's full of beings that are watching and listening to us, that are in communication with us, that are impacted by the choices that we make, and that can help us or harm us. When we believe that, when we have the understanding that we are in the presence of the Sacred, that holy beings are watching us, that we are never unobserved - then in that knowing, then we tend toward a more ceremonial life. Or a more prayerful way of life. If you know somebody's watching you, Mom, for example , or Jesus or somebody, if you really believe that, then you're going to be more careful. You're going to be more attentive.

The basic mindset of ceremony, it's not just about some ritual, chanting something or doing something like that. It carries over into everything else. It carries over into doing things just right. It carries over into "The One Straw Revolution," Fukuoka. Understanding that there is a Beingness here, an intelligence here, that I'm humbled in its presence. And in that presence, we do things better than we need to for any instrumental reason. If you place things on your altar, you do it just right. If you make art, you do it as beautiful as it needs to be for the sake of that artwork. Not for the market, not for the client, but for itself. Because you are in service to this sacred thing.

If we approach agriculture that way, if we approach our interactions with the rest of the world, the rest of life, the planet, in that way, everything will change. So this emphasis on ceremony, this isn't just some religious, superstitious belief system. This is a way to program ourselves and to bring ourselves into seeing the world as sacred and conscious, and a Being. To reunite us with the rest of life. Because we've been separated.

And that's what unifies a Kogi shaman doing ceremony at a traumatized piece of earth and the permaculture farmer observing the plants and the animals and the soil, and being in service to those beings. It's all the same attitude of ceremony. It doesn't exclude any of our ways of knowing. The permaculture farmer's observations could include soil tests. It could include anything that goes under the name of science. It's not that science is the wrong road. It depends on what it's in service to. By itself, it is not enough to save us, or not enough to enable our transition into a more beautiful world. Technology and

science are not going to deliver us to utopia. But when we put them in service, along with all of our other gifts, to Life, to all of our companion beings here, then they are precious.

Climate 11.2 - The Core of the Indigenous Worldview

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If we want to be motivated by love...if we understand, if we say, yeah, fear programing and fear for our survival is not enough to generate the courage necessary to change our ways as a society or even as individuals...we have to be motivated by love. Love for this planet. Love for its forests. Love for its soil. A love for all beings here. Where does that love come from? It's only possible when we see them as beings, as something we can love. I think I said...when I was talking about the horseshoe crabs, if we see them as nothing more than a brick, then why not turn them over and be entertained by their struggles?

So, this is the core of the indigenous worldview. And I rarely say "the indigenous worldview" because that eraces the differences among indigenous people and cultures that saw the world in very different ways. But, without exception, I have seen one thing in common. Which is that they do not think that they are the only beings here. They see the world as alive and full of beings and full of being. And that's why I can say in this one case, I can say "the indigenous worldview". So the core of it, yes, is the world as a being and therefore can receive our love and is worthy of our love is something that can be loved. It's something that can feel pain. It's something that can have a dream. It's something that can have a desire. If we hold it, if we hold the world as an insensate object then why even ask, "Are we causing it pain"? That's a ridiculous question. But if we know that this being that we love can feel pain, can feel anguish, then it's not so easy to continue doing what we're doing.

And this is what one of the Kogi said in the movie *Aluna*. I think it was in the movie or maybe in some of the material around the movie, but the Kogi said, "If you knew, she could feel you would stop." Violence is facilitated by dehumanization interpersonally. Violence against women is facilitated by objectifying them, making them less than human. Making them into an object. Exploitation of people, economic exploitation of people around the world, is facilitated by reducing them to something less than full humans. They become a labor force or a market or a consumer. War is facilitated by the demonization of the enemy. And the same thing with the despoliation of nature, with the exploitation of nature, the ruin of nature. It's facilitated by making it into less than a being. And then we can ignore what we really know on a body level, which is that she does feel. She does feel pain. We can block that knowing. We can shield ourselves with an ideology of reductionistic materialism from the pain that we too feel when we wreak destruction on a beloved.

And so how do we recover our sensitivity? How do we recover our connection to our knowing that we're hurting something and that hurts us too? And this is another dimension to the whole conversation about what world we want to live in and whether a concrete world is acceptable. It can seem that we've kind of gotten off scot-free, that we've committed atrocity after atrocity on the living beings of this world, and we're still doing fine. At least the privileged white elites are doing fine. They've gotten off scot-free. Why not continue to do that if we're not suffering the consequences?

I don't think that that's actually true. I don't think that we have gotten off scot-free. I think that we, on some level, feel the pain and the loss but we don't even know what we've lost. All we feel is a loss, an emptiness that we can't identify and so we endlessly search for something to fill that void. Something to make it feel better. Something to fill us up. And those substitutes for the reconnection that we really want

never can meet the hunger. It's only when we really go into the grief and recognize what's been lost, that we are then capable of healing and reconnecting and stopping doing it.

If you don't know what's hurting, then what's to stop you from continuing to hurt? If you don't know that...I don't know...eating sugar is making you sick and it kind of tastes good, then why not keep eating the sugar? But when you understand what's happening, then a chance for healing is available. And so this isn't about sugar. This is about harm. This is about violence. This is about killing. This is about ecocide. This is about dehumanization. It actually hurts ourselves. We suffer a loss of all that we've extinguished from the world. We've extinguished something inside. And that is why it's so important to allow in some grief, to feel the loss. Grief is the is actually feeling the loss and not holding it away. Not denying it, but letting it in. And so it's part of a healing process. And then you know what hurts. And just like you won't stick your finger in a flame, you're not going to want to do that. You're not going to want to do something that hurts.

So this is an essential reconnection. It's not just that we need an ideology like a new spiritual teaching, a new world story that holds other beings as valid, as alive, as agents and subjects and conscious. That's part of it. But there's also the feeling level. There's also the trauma level. Like, what has made us not feel? What has calloused over our souls? What's made us numb? And this points to the unity of various levels of healing. How personal healing is necessary for ecological healing to even happen.

So if your profession, if you're calling, is on the personal level, this is not to excuse you from politics, but it is to validate what you are doing as an essential part of the healing of the world. If you're calling is to is to make beauty. If your calling is to heal communities, if your calling is to spread kindness and generosity, these are also part of the healing of the world. If you're calling is to point people toward what is actually hurting them and to give them a safe place to express their grief and to know their loss, then that is part of the healing of the world. And that goes totally contrary to the fundamentalism that says these things are distractions from the one true cause, the one action that will save the planet right now.

The healing is on every level. We need to learn to be human again all the way. We need to learn to feel again. And we each participate in that collective healing in a unique way. And we recognize what our part is through the call issued through our hearts to our love and our care. And we can trust that following that call, we will be put to best use by the intelligence of the world.

As we align ourselves to a healed world by listening to that call. Every act in service to life aligns us with a world that is more alive. No effort is wasted. Even if we can't say how it's going to make a difference. No effort is wasted. You could say, every act a ceremony. When it isn't service to life, every act is a ceremony.

Climate 11.3 - Unleashing the Power of Nature

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So here's a general principle that I've been living by: that the story that we hold about a person is an invitation for them to act from that story, to be that story. The story that we hold about the world is an invitation for the world to align with that story.

So if we hold a story of the world that nature and the beings of nature...mountains, rivers, forests, oceans...have a power to alter the course of history, to interfere, to intervene in human affairs, to be our allies in the healing of the world, then we are able to draw on those powers. We are able to ally with those

powers. Because some people say, yeah, you know, if the mountains...if the indigenous people are right and the mountains have great power and the oceans have great power and the whales.... Well, why haven't they done anything about this?

Their power is not the same kind of power that we think of in terms of exerting force. Their power is more of the kind of: arranging synchronicities. When you are allied with earth powers, which comes through service to earth powers, comes through service to the healing of the world, comes through seeing the world as alive and intelligent and sacred...and making choice after choice after choice that demonstrates the sincerity of that belief, the authenticity of that belief, then those powers do ally with you, and you find yourself again and again in just the right place at just the right time. Meeting just the right person. And how effective can you be when you have access to that alliance, to those powers of the Earth? It's not that they're going to reach out with a lightning bolt and strike down your enemy or magically change your government policy or something like that, but they might arrange you to have a chance encounter with that government minister in a special moment in life and to have a deep experience with that person. Things like that.

Without that access, without that kind of power, the situation is hopeless. We're not going to overcome the powers of the world through force. The military, industrial, pharmaceutical, agricultural, NGO, philanthropic....did I leave anybody out?....you know, complex. They have the force, they have the guns, they have the media, they have the money. We need another source of power. We need to live in another world, another reality than they do. We need to really live in and source from a world, a universe, a cosmos that is intelligent.

To enter that reality, where the impossibly unlikely can happen, we have to choose to live in that reality. We have to do things, moment by moment and day by day, that affirm that reality, that declare that reality to ourselves and to it. And there is a bit of a paradox here. It's like.... It's real if we choose it to be real. It's there already. We didn't create it. It's not that we're making something up through creative visualization and new age technology. It's there already. And we must bough to it. We must serve it. We must court it. We must make offerings to it. We must make gifts to it. And then we live more and more in it and we become capable of much, much more than we could make happen through our force, through our planning, through our causal understanding of the world.

If you want a more beautiful world, we have to live in it. We have to choose it. We have to choose who we are in resonance with that world.

That maybe sounds a little intimidating. Just look for the next step toward that. That's all you need to do. Each step you take, each little change of habit, reveals the opportunity for the next step.

Climate 12.1 - The Living Planet View

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The overarching theme of this book, Climate: A New Story, that I wrote, is really the living planet view of the world. From that place, the priorities of an environmentalist become a little bit different than they are in the dominant narrative. And in the book I listed something like 17 or 20 different priorities, actions that we can collectively take to serve the emergence of a more beautiful world, of a healed world. And I can kind of boil them down to four things, actually, four priorities and maybe one more. Yeah, so I'll do four and one more.

Top priority is to protect any pristine ecosystems that still remain on this planet. Especially the Amazon and the Congo and many other places, too. But these places that are still intact. These...are the reservoirs of biodiversity. These are where Gaia's deep memory of health still resides. And if we have these, then there will always be hope for health to radiate back out from these oases. From these...What's the word?...There's a word I want to use: redoubts. But that's not a very common word. It's like...a base, a base camp of health. So that's the top priority. Whatever still exists in in relative health, pristine forests and wetlands, old growth forests...those things...those are much more important than we could possibly imagine through a carbon reductionist lens. That's top priority.

Second priority, nearly as important, is to regenerate and restore and heal all that has been damaged, particularly soil and water and forests. So this is the regenerative agriculture. This is the watershed restoration. This is the caring for forests, the deep ecology work to bring health back to where it has been damaged.

So first priority: Conservation, preservation, protection. Second priority: Restoration, regeneration.

Third priority is...so the first two are kind of on the organ level, the third priority is more on the tissue level. It's to stop dumping poison into the world. Haven't really talked that much about this. These issues have kind of taken second seat to emissions right now. But the pollution through toxic waste, pharmaceutical waste, agricultural runoff, pesticides, insecticides, fungicides, herbicides, etc, etc. These are poisoning the planet in ways that we can barely even imagine. Sunscreen washing off our bodies and getting into the coral reefs. Estrogen mimicking chemicals...estrogens from birth control pills. Antibiotics that are passing through our urine into the water, into the ecosystem. These things have unimaginable effects.

Fourth priority is to cut fossil fuel use. I haven't emphasized that because it is very well emphasized elsewhere. But a planet that has lost so much of its resiliency, has sustained so much damage to its organs and tissues, is not resilient to the rapid rise of greenhouse gases. It can't handle these challenges very well. So I think that is important, too. And, not as important as the other three, but important. But you know what? It is a side effect of the other three. There's no way that we can protect ecosystems and regenerate land and continue to mine and drill and frack and pipeline and do all those things. It's impossible. And to risk oil spills... So really, the fourth priority emerges from the other three.

And, I want to say one more thing that is also often kept in a separate silo from environmental issues, and that is Peace. As long as humans are at war with each other, not only are we consuming vast resources, maintaining a war machine and vast human capital, creativity, scientific work all going toward killing each other.... But also our psychic energy of conflict: That radiates out into the world and maybe beyond. It's part and parcel of the war on nature. The whole idea of "evil originated as a war on nature and overcoming of the wild." So the template of war is part of ecocide. And as long as our....

In a war, your top priority that trumps everything else is to defeat the enemy. When we're bombing Iraq or bombing whatever, we don't worry about the ecological effect of the bombs. Because first priority is defeating the enemy. So, generalized that. The war economy, the war machine is based on a different priority than the healing of the world is. Where do we put our priorities? If we hold conflicting agendas as an individual, we create conflicting results. We have to decide what are we serving here? Practically speaking, as long as we are incinerating so much of our energy, fighting each other, distrusting each other, judging each other, hating each othero, we're never going to come into the coherence necessary to...I'm not going to say save the world...but to serve the world because we're in service to something else. Part of the transition, part of the initiation is in service to life. We have to come together. We have to come together as as a as a species. We need to unify. This is obvious. One of the good things that's come from the climate narrative is that it is uniting people around the world toward something that we all hold in common. And that's a positive step. I don't think that's really happened before on Earth.

It's a new stage in the curriculum of Interbeing, which is the new story, the new and ancient story of who we are: that we are a relationship. We are interconnected, interdependent and inter existent. What we do to the world, we do to ourselves, what we do to each other, we do to ourselves. We enact violence in

another country and we suffer domestic violence at home. All these things intimately connected. We're beginning to understand that. That's what we're being initiated into.

So that would be...you can't even list it as a priority. Without that, without peace, there will be no healing. So my gratitude to the peace workers. Trying to stop war and to the peace workers on a more subtle level. And to the peace work that maybe you're doing every time you put down a grudge. Or let go of a judgment. Or stop seeing someone as the enemy and really try to understand them and ask, what is it like to be you? Then you're waging peace. You're changing the field, the morphic field, and you know that any outbreak of peace anywhere contributes to the field of peace.

The question, what is it like to be you? Why did you do this thing? What are the conditions that brought you to this? What are the conditions that brought you to drive that SUV, to fly in that airplane, to build that oilwell? Instead of just making you into an enemy, as so often happens in the environmental discourse: Those bad people! How could they?...But to ask why? What system are you lodged in? What pressures are you under? What story do you live in? That's called peace. Asking that sincerely.

And maybe you still fight with a lawsuit, with a direct action. Maybe your understanding of that person does not lead you to be able to change the situation, to change those conditions. But at least the possibility is there. At least you're not addicted to fighting, not defaulting to the fight as the only way to solve the problem. That's part of the same mentality as finding The Cause. What's the thing to go to war on? And this is what I've been talking about. Understanding the interconnections of all things, ending a war on nature.

So without...I'll say it again...without peace, there will be no healing. Any act of peace is an act of healing. All the way to the ecological level. So, again. Maybe one more thing. The peace needs to extend to ourselves, too. If you are in condemnation of yourself, that's not peace. But maybe have some compassion for yourself. What brought you to do the things that are harming life? In what ways do you feel helpless? Powerless. In pain. Hungry for something you don't even know what it is. I'm not going to answer those questions. I can't answer those questions. Maybe you can't answer them right away either. But they are loving questions. They're based on: there must be something because who I really am is somebody who loves the world so much, who loves life so much, that so desperately desires to serve life. To be part of this magnificent...emergence. That's what I really want. I know that of myself. And what if you tried knowing that of all the people you condemn, not just yourself? That's called holding a story that invites people into it. Holding a story of a peace, holding a story of a healed world. That includes the story of who people are.

It's not to ignore, to dismiss the things that are causing harm that people are doing, but it's to believe that's not really who you are. And to hold that, not as an ideology, not as a delusion. But to try to see it. And maybe sometimes you don't see it, but you can look for it. That's peace, to look for it. And so here we can see just the relatedness of every level of suffering in this world and every level of healing.

As I said near the beginning, I think I said... Global climate and the social climate and the psychic climate and the internal climate, all of these are related. The war on nature. The war on the self. The war on each other. All related. So thank you for accompanying me through all of these thoughts and stories, for joining me as a peace worker, a love servant, a servant of life. Imperfect though we all may be, I can feel...I mean, what sustains me in it is the service of others that reminds me that I'm not crazy. That inspires me to...I can do it too. That's what I think when I see a brave person. I'm like, thank you for showing me what's possible, for showing me what a human being can be. Maybe I can do it, too. Even if I never see you, I can feel you. We can all feel each other. That's how we build the field. So thank you.