Using Earthy Order to Spark Change | Saleem H Ali

[00:00:00] Guest Intro - Saleem H Ali

Darin: What's up, everybody? Welcome to the show. This is Darin Olien. How are you doing? What's happening? How's your world? Are you creating? Are you generating? Are you clearing out your life of distraction, or do you need a little shake-up? Well, today, I want you to focus and listen to this incredible conversation I had with Saleem Ali. He is such an interesting guy. He has a bachelor's in chemistry from Tufts University, a Master's and Ph.D. degrees in environmental policy and planning at Yale and MIT. He holds a Blue and Gold Distinguished Professorship in Geography and Spatial Sciences at the University of Delaware and is an honorary professor at the University of Queensland, Australia. This is such an incredible conversation. I felt like I wasn't even doing a podcast. I felt like I was just talking to someone I was so interested in learning more. He also is a fellow of the Royal Society of Art, and the Royal Geographical Society in the United Kingdom, and serves on boards of Adventure Scientists and Mediators Beyond Borders International. He has traveled to over 150 countries. So when you get this kind of understanding of the world, you have a perspective that is very unique because it's so easy to reduce things down to your limited view. It's so easy to say, hey, don't use plastic bottles and use glass. Well, you can always do that depending on the situation, depending on if you're in an airport. That's a very little example but as we look at global issues, food waste, power systems, solar, wind, how we look at all of our systems requires a broad view and a broad understanding of how these things are working, and how they are failing. But for me, when I listen to someone who has such a breadth and width of understanding, you come to realize everything is more complex than just a flippant idea. If the idea is not shared throughout many different parts of a system, then we're concluding things that then don't really make sense in the real world. So when you look at things, we have to broaden our aperture. We are not experts. We can't pretend to be experts in areas where we haven't done the study. We need to stay curious. This is very important in this day and age. So sit back, relax and enjoy this incredible conversation with Dr. Saleem Ali.

[00:03:20] Podcast Intro

Darin: You are listening to The Darin Olien Show. I am Darin, and it is my life's mission to find and share healthy and sustainable ways of living. In this podcast, I talk to inspiring people and professionals from around the world to uncover ways that we as humans can improve our lifestyles, strengthen our mindsets, and take better care of this beautiful planet we call home. If you're looking for motivation to take the next steps towards a happier, healthier life, then you're in the right place, and I'm stoked that you're here. So let's do this. This is my show, The Darin Olien Show.

[00:04:04] First Part of the Interview

Darin: Saleem, I'm super stoked to talk with you. I was just so touched and moved by who you are and what you are, what you're doing in the world, and the gaps that you're bridging

especially now more than ever since the lexicon of these conversations of the environment and of government and of policy and all of these things certainly can be confusing and be misleading, as well as people don't know. So, your background is so interesting that I want you just walk us through, walk me through again, the journey that you've taken to have this unique Ph.D. in environmental policy and chemistry background and working with Yale and MIT and just putting together these gaps. So how did you land here and where are you going with your work?

Saleem: Thank you so much, Darin. Well, I feel very blessed that I had an opportunity both in terms of my upbringing being in different countries or having been born in the US, but then growing up in Pakistan, then coming back to the US and living in Australia, then coming back again to the US now where I'm based, and then traveling to 150 plus countries in between. That has really helped to give me a perspective and a certain level of humility, I would hope in trying to reconcile various complexities that the planet presents us with both ecological complexities and social complexities. So the way in which I see this is that I feel as though if we want to find solutions to the problems presented by the planet, first of all, we need to have a foundational knowledge of some of those key concepts that are underpinning reality. So that's where the basic sciences are important. And often we say, you know, scientists have a chip on their shoulder because they think they know best. They shouldn't have any arrogance about it, but the reality is that science does underpin our fundamental functioning of order and that's why I wrote this book and titled it Earthly Order. The first part of the book is on natural order. And that's why when I started my academic journey, my first degree was in chemistry because I really felt even though I knew I wanted to do environmental studies, I knew from a very early age, and I thank National Geographic magazine for that because my parents put me on a subscription, I think, when I was probably 12 years old, and I was really captivated by environmental studies. But when I went to college, I felt that I needed to major in some basic science because I felt that would help me understand environmental issues better. So I started with that but then, for my higher degrees, I bridged out into social sciences, and I see myself now as very much a system scientist who brings together natural and social sciences together.

Darin: That's so important. I mean, let's give a shout out to National Geographic. As a kid as well, my father had a subscription, and you would see those just stunning pictures of firstly, bringing in a world that-- I'm from a small town, little Nordic family in Minnesota, sheltered by that, but when you saw just mind-blowing pictures and stories, that was the first obviously well before there was the great photographers of our time now really bringing us and Mutual of Omaha, of course, as well is a big one. So I'd love to hear because it's such an invitational book, Earthly Order, how natural laws define human life. That statement alone, if we actually follow it in our systems approach to almost everything, if not everything, where we really see the system of there is no waste, just our lack of our ability to understand how to reuse it, reconstitute it, recycle it efficiently and effectively. There is no waste, there is no loss. It's just our inability to create a system, effectively capturing it, or whatever. So where do I start with that question, in a sense that how do you start in terms of looking at the world and maybe pick a subject of how do we define natural law? And then how do we put it up against a system that may not be working? And how can we better it kind of looking at this earthly order lens?

[00:09:03] What is Earthly order?

Saleem: So one of the fundamental premises of Earthly Order is that we have to be constantly dealing with this material energy nexus. How do we convert materials from one form to another more usable form by injecting energy? Or while we do that conversion, we release energy and how can we capture that? So that's kind of a fundamental functional as earthly order, that material energy nexus. And if we look at our current planetary problems, much of our challenges around providing for poverty, alleviation, and so on, are based in this issue of how can we get these resources, material resources, and convert them into more functional forms so we can develop an economy. And if people don't have a basic understanding of some of those principles, then they can make errant decisions. Even for example, when we talk about this issue of non-renewable resources. Some of my early research has been on minerals and mining development because minerals have defined human civilization. We talk about the Bronze Age, we talk about the Iron Age, and so on. And now maybe we can say we're in the aluminum age because that's probably the metal that has the most products currently. But if we think about the minerals of the earth, and we frame them as non-renewable, which is what sometimes environmentalists often do, they talk about forestry and agriculture, as renewable and they talk about minerals as non-renewable. They are missing that material energy nexus because actually, minerals in a circular economy are renewable. You can recycle them, you can do other aspects of them. The only way you convert one element into another element is through a nuclear reaction. If you're not having a nuclear reaction, you're just converting that element into some other compound, and then you will have to figure out a way to retrieve that element back through injection of energy. So I think if we frame the conversation that way, we would have a very different kind of paradigm of our relationship to minerals, how we can think about developing new technologies, designing new technologies. So that's been one of the areas in which I've been working in applying some of these principles of Earthly Order.

Darin: I really love that because it's not a conversation that it's usually on one side or the other because using the kind of MUSE as you know, we want to electrify the world, we want to get all-electric cars. If you really peel that open, there's a huge amount of mining that has to go on, and precious metals and all of that stuff. So let's use that as an example. I don't think we have recyclable renewable systems in place to deal with the amount of lithium-ion batteries and all of these other types of batteries to recycle them effectively. I use recyclable batteries for my solar storage here on my property from some cars that were destroyed, but the batteries are still good, but that took a lot of effort. There's not a system in place. So how do we look at this through this lens of earthly order, as we're on one hand trying to sprint towards what is a "renewable electrification" or electric cars because I also have my own arguments that this may not be the best path, it may be a path, but we have to think about these things? So how do you look at that then from that perspective from the electric car, or the electrification, or I don't even want to open up the can of smart everything?

Saleem: Absolutely. I mean, I think a systems perspective makes you consider all the different metrics that you need to evaluate in order to make a science-based decision. So for example, if you're looking at electric cars and the usage of those cars long-term, you have to think about how long will the batteries last. And then if the batteries last for certain years, then you don't have the stock available to recycle those batteries. So you have to find some sweet spot about what is the best age for a battery, so you can retrieve it and recycle it, considering the demand for new electric cars. Because if you don't, then you'll have to mine

more resources to be able to make the batteries. So you have to then, for example, bring up this notion that economists have planned obsolescence. How much do you want to have that life of a product, so you can bring it back in the system and recycle it? In the long run overall, you also want to have durability of products because that will reduce your overall material footprint. So it requires calculations. I mean, that's where the hard science comes in. You really need to be able to do those calculations. We have tools like lifecycle analysis, which can help us compare different materials. So for example, aircraft, we know that in the last few years, there's been a move towards carbon fibers usage rather than using metals for the fuselage of aircraft. The frame is still metallic often, but it's the fuselage itself that's moved to carbon fibers because they're lighter. So the operational cost goes down for the airlines, you also save on carbon. But the manufacturing of the carbon fibers requires petroleum products, and they're often not recyclable. Then you do a lifecycle analysis to compare what's the benefit you get from the transition to carbon fibers versus metals, or the operational usage, and so on. And then you'll make a decision based on that, okay, if this product is going to last for this many years, then carbon fibers makes sense. If it's not, then they don't, and so on. So I think that's the kind of level of detail which is needed, and we should not be shying away from making those tough investments and doing those calculations.

Darin: We're such a clickbait world right now, where we just assumed that electric cars are the future, are the best, no emissions, just because I can see that there's not an exhaust coming out of it that I assume, of course, it's carbon neutral, but that is such oversimplified. Does it make you a little crazy because they don't have 99.9% of the information. This kind of makes you a little nuts because you know that that isn't true, in one respect, so to put you on the spot from what you know about an electric car, you have to drive it for a certain period of time before it even makes sense.

[00:16:05] Are electric cars going to save the planet?

Saleem: So with the electric car, there are a few different aspects which come to mind when I frame it in this notion of both the earthly order, but also of the materials. And one of my earlier books called Treasures of the Earth, I looked at human relationships with materials. And what's happened with the electric car is we brought in so many new metals to make it work and the new technologies to make this transition that it's really opened new frontiers for resource extraction and so on. So first of all, we have to think about that in terms of what are going to be all those new resource needs. Second, is that we have this thing called Jevons paradox. There was this economist in the UK a long time ago, more than 100 years ago, where he studied coal and in the industrial revolution and so on. And he came up with this notion that efficiency, when you make something very efficient, it doesn't always lead to reduced consumption. And that's a very fine point because usually when we say something is efficient, you think that's a good thing, you want to be energy efficient. So hybrid cars are more fuel-efficient. Electric cars are more efficient in certain ways in terms of mileage. But what ends up happening in terms of human behavior, is when you make something very efficient, people start to think they can consume it more because it is efficient, and you get what you call a rebound effect, and that's called Jevons paradox. What you would think as being something that will reduce environmental impact ends up potentially making more of an impact if you have some suppressed demand for its usage. So with hybrid cars, we saw that initially that people ended up driving far more when they had a hybrid car. So they

ended up consuming more gas if they were not paying attention to their total consumption. So that then in terms of planetary impact, you have increased the impact even though the individual is not really feeling that because their gas bill is still lower. So that's a real challenge with electric cars. We have to keep track of this rebound effect or Jevons paradox also.

Darin: If you had a crystal ball right now, what do you think about it? If everyone got an electric car today, number one, where are they getting that power? You got to plug it in somewhere. California here where most of the power we're getting for our state is from coal and natural gas. And so we're using coal and natural gas for you to plug in to create electricity for your car. Things like that, this is where the analysis needs because we can sprint towards our own destruction in this.

Saleem: Exactly. I mean, especially with electric cars that are connected to the grid, you have this thrill challenge of, first of all, providing the sustainable energy infrastructure to go into the grid and then you also have to keep track of the consumption. So my concern is that we tend to get into a linear solution, and then people just kind of run away with it. Then their economic incentives, which prevent us from seeing the forest for the trees, and so to speak. So you just don't pay attention to the whole system-wide impact of what that might be. So there is a space for electric cars. I think certainly in the future if people want individual mobility to have that, but I think the COVID pandemic has also shown us that there is potential for overall reduced consumption of physical mobility through telecommunications and even though telecommunications also have their own material infrastructure. I made a little documentary actually for the UN Environment Program called Material Zoom during the pandemic, where we looked at the material impact of having a zoom economy. Basically, where everyone is doing work from home. You do require cables underwater, the physical infrastructure for the internet, you need servers, which require energy. If you do a lifecycle analysis of all of that, and then you look at how people were using commuting back and forth through cities, work from home will come up still better because that's one-time infrastructure cost is a lot. They will be especially as you electrify, it'll come out better. I mean, I think we have to think creatively around all these aspects, and then we'll see how many electric cars do we need. Do we need ride-sharing? A shared economy is potentially having much bigger impact than individualized mobility for everyone having their own car. We made that change in other areas like photocopiers. There was a time when universities like mine used to buy photocopiers or offices. No one buys photocopies, they lease them now. And it's a shared economy kind of concept in some ways, and those photocopiers or they use services like Staples and all which have become much easier to have a shared economy around printing. So you reduce the material footprint because you've come up with a different solution. So I think the same is true of your concern with electric cars, we have to think about some other creative solutions.

Darin: These things are massive. We have to make better decisions broader than profit. We have to make these broader, which is why I love your work and we need to illuminate this more. We need to open and expand our aperture on this stuff because we're just going to sprint towards a bigger problem, that's where really the concern is. We kind of overcorrect sometimes, and we don't critically look at this stuff. We do this all the time. The environmental movement is big, from my perspective, they do a lot of things wrong in terms of over simplifying and then everyone just betting on, yeah, man, if you're putting gas in a big

truck, you're an asshole, you should have an electric car. Come on, man. Sometimes keeping an old truck and keeping it in existence is potentially better. And what if I have carbohydrates or agricultural wastes that I distill, and I put alcohol fuel in my old truck. You could do a lifestyle analysis on that. It's probably infinitely better than your electrification.

[00:22:39] The impact of social decisions

Saleem: Exactly. In biodiesel and using that increasing the life of the use of that car or truck is by far likely to have a lower impact in the long run. Then also social decisions can make a big difference. One of the parts of earthly order is on social order and the connections there. For example, I serve on the United Nations International resource panel and we did a report on resource efficiency and climate change a couple of years ago. And one of the strange findings we had was that the shared economy itself, depending on how it is socially constructed, can have both a positive and a negative effect in terms of material usage. For example, Airbnb has made the case that they are being environmentally very friendly because they're providing opportunities for unused infrastructure to be used. So people can share their homes, people don't have to stay in hotels, and so on. Then you don't have to build new hotels, so you use less material. Because they hadn't set up a good governance system and some of the top sorts of tourist destinations, what you ended up happening was that people started renting their homes as hotels and that rental costs went up so much that people couldn't afford to live in those cities, so they ended up moving outside and they had to build infrastructure outside. Now, during the COVID pandemic, what we found was one of the single biggest reasons why we got reduced energy consumption and lower carbon footprint was because kids moved back home with their parents, and it happened in our own home. My son was living in New York City and he was doing a Ph.D. at NYU. He moved back home because we couldn't live in the city, especially in the early days, and then he just stayed for two years. He has been commuting from home from Delaware because he knows he needs to go once or twice a week he can take the train, but that reduced the total energy footprint so dramatically. But it was a social issue really, and people started to think about like, we can live as families together. We don't have to all be moving out. There's a cultural imperative, kids have to move out after a few years. Do we really need to? And it was something that the pandemic forced on us. There were calculations actually done of how much that reduced the carbon footprint.

Darin: Did you ever make it to Bhutan?

Saleem: No, actually, Bhutan is on the list out of those, which I have not yet been to. But definitely because of the gross national happiness, work, and all the King, who voluntarily gave up his control over the country to transition to democracy is a remarkable story.

Darin: Exactly and I got to be there at that time. I met them and I was there in 2007. I had some cameras. We did some documentary stuff. That's what it reminds me because as you know they're surrounded. They might as well be an island in the Pacific. They're surrounded by 23 of the highest mountains on the planet Earth. So you can't just get there. So they looked at this as like, we have to be very aware of every choice we're making, culturally, economically, politically, all of that stuff. I went around and talked to people and they were like, hey, if the king says we should do it, we'll do it. We would rather listen to our King. Because the king had this broader aperture anyway. They were governing from a broader

perspective. So they didn't feel lopsided from the political intensity, or what seems to be lopsided in our decision-making here. So as you look at our world and our American world, and also around the globe, how do we start teaching our society, our governing systems, our political systems that hey, man, there's more than just an end goal of power and profit, we need to do better?

[00:26:50] Using Earthly order to shape our future

Saleem: Absolutely. I mean, I think what Bhutan got right clearly is that they focused on quality of life indicators. And economists are increasingly telling us that we need to be focusing now on those indicators of well-being, rather than the conventional indicators that have been used, which are of productivity and so on in terms of GDP. GDP has a place overall for measuring development because you want to be able to think through in terms of economic growth itself, I think there is a case to measure those conventional parameters. But when it comes to thinking about how well a society is doing, those measures are not enough. You need to have those metrics of wellbeing. The challenge becomes how can you upscale. So a country like Bhutan can do it because it's very small, and they have been able to have a certain cultural homogeneity, which also creates more opportunities for order. So doing it in a diverse society, with multiple objectives, with much larger scale, that requires us to have a much more well-governed mechanism of getting feedback from communities, getting people informed. And we do need to recognize that at some level, there will be sub-optimality. We will not be able to make everyone happy in the same level. And we will also not be able to achieve the same environmental outcomes that you could in a smaller society. So this becomes the real challenge then, which then we have to reconcile because if we want to then become too insular and small and scale and all that, I mean, then you may be shutting your eyes out on the bigger problems of the planet. I lived in Vermont for 10 years. So I was a professor at the University of Vermont. And Vermont prides itself on local communities, local efforts, and that's great. It's sort of a microcosm like Bhutan, small mountain kingdom, so to speak. In fact, that one time, they wanted to be an independent republic, as well. But they could do it at a small scale. I would have these debates with my students around. They were saying, we just want to buy everything that's local. We just want to have everything that is being grown in Vermont and so on and so forth. I said to them, to a certain degree, that's fine, but if you go to a point where it's preventing you from seeing the planet and its problems, then you are not thinking as a system. You are just thinking in your little microcosm or a little bubble. So you need to navigate that tension between the local and the global. I said to them, I don't feel guilty if there's a little bit of a higher carbon footprint, and if I'm buying from some poor country in Africa where this is a source of livelihood for them, rather than someone in Vermont was just knitting a sweater and I need to buy the sweater from them. You want to support them, but you don't want to necessarily negate or look down on people who want to have a global vision. There will always be some tension and sub-optimality around that for people who don't want to see that bigger global vision. I tend to be one who sees more of the planetary side and that's for me, the point of being a global citizen really is important.

Darin: There's so much there because you bring up individual choice. I believe that if you give people basic water, power, food, shelter, not give, I'm using give lightly, make available. People would better govern themselves. Where I'm going here is micro support, micro power grinding, but it's also using global infrastructure, it's using local infrastructure, it's using

monopolies infrastructure. It's not cutting things off. It's using. It's moving together. It's not perfect, but it moves together. But how do you reconcile that kind of individualism of sovereignty and if we were to make available more choices that were sustainable and supportive of food and water and shelter? I know that's a lot.

Saleem: There are increasingly global norms about what are fundamental rights to resources like water and food and shelter. We have very nascent governance mechanisms to provide that like the World Food Program, where there is a recognition that under even the worst situations are where you have the most political disagreements, no country recognizes the government, they have to be provided food and basic provision. So the World Food Program is there. And even countries who don't recognize the Taliban are providing meager as it is, but at least some resources. We have come a long way in the last two to three centuries to recognize that, but we still have also increased the level of global inequality, especially in the last 30 to 40 years. So when people see the grass is greener on the other side, and there's a feeling even though they may have themselves had a better quality of life, there's a greater sense of deprivation because they're seeing so much more wealth on the other side. In terms of individual choice and what you do like if you earn your income, how much control should you have versus how much, for example, the government should come and tax you? Those are fundamental questions, which at some level, society should be able to negotiate through democratic processes. But we will always have to recognize and this is something that the great economist, Amartya Sen, noted in some of his earlier work. He won the Nobel Prize in Economics for his work on famines. He wrote a paper called The Impossibility of a Paretian Liberal in a liberal society, which we say America is a liberal society where we value individual choice. It is impossible to have an optimal outcome. Paretian Liberal meaning it's a term and economics who are named after an Italian economist Pareto who talks about Pareto optimality. So if you are in a liberal society where you value individual choice, you will never have an optimal outcome. It's also something that another economist framed in another way, it's called the voter's paradox, that in a voting system when you have voting and individual choice, people expressing, you will never be able to get an outcome which everyone is happy with. Now, that sub-optimality, we have to recognize and learn to live with. Environmentalists have a very difficult time with that because environmentalism by its very nature is a utopian ideology. We talk about like a garden of Eden, we want a society, the ideal society, we want to live in harmony with nature. And in a democratic system, you come into this tension that you cannot have that optimality in the same way, but the good news in the democratic system is you have much less chance of making errors which you cannot correct. So in a democratic system, the good news is even though you can't get the optimality, you are able to have more self-correction mechanisms if you make errors. Whereas in a highly centralized autocratic system, you could do everything right, but you could also do everything wrong. So you have a higher risk profile on that level. If we understood and reconciled with that reality, we would end up moving much more functionally towards sustainability because we would know the limits of what we can achieve through shared governance.

Darin: It's almost like there's a realism that needs to be because it's also like I would imagine through your systems approach of looking at it, it's kind of like this realism of like, of course, you want everyone to live the life that they love. You want that as a human to human, you want the best for people. And I believe that at my core that everyone in there somewhere

has that to lesser or greater degrees that we are human family, we are absolutely connected. So when you say in the democratic society, it will never be optimum, how does that show up? Does that mean that there is always this level of tension? If I look right now at the ground, there is a level of tension in the ground with every microorganism, every insect, every bird because they are fighting for their life all that freaking time. I live out here, I see that a beautiful hawk and then I see him tear open a freaking ground squirrel in a nanosecond. There is a tension but you look at it, going back to the earthly order idea, there is a nature's balance but yet, when you look at it, you critically look, it is an intense push and pull struggle. Do you know what I'm saying?

[00:36:22] Nature does not determine human fate

Saleem: Absolutely. One of the characteristics of earthly order is that it can lead to irreversible processes. It can lead to extinctions, and those have been part of earthly order before humans even. So we need to recognize that aspect. What I'm very careful in the book is not to say that nature determines human fate, which is sort of what we used to call determinism, like natural determinism that you are just defined by your environment completely, but it is that the decisions we make have to be recognizing the parameters of natural systems. And if we do not do that, we will end up with a different future, which may require us to adapt then in different ways than what we would have wanted to. Then we will have to put in more energy in certain areas and have a different mechanism of defining what the future of humanity is going to be. At the end of the book, I have this kind of sort of five take-home lessons and one of those lessons is around order can be discovered and invented. So what I mean by that is that there is a certain natural system of operations of cycles, carbon cycle, phosphorus cycle, we talk about all the cycling of the nutrients on the planet and so on. But human beings are capable of also inventing because we have evolved a certain level of intelligence, and that's why we are calling this current geological period, the Anthropocene that we are living in the age of humans as a period in geological time, that we can invent order in ways that is singular. And that may lead us to a very different kind of future. But as long as we are aware of those distinctions, then we can come up with a much better outcome in the long run.

Darin: That Anthropocene, is that a 10,000-year cycle or something that we're kind of in right now or we're shifting into or what is that?

Saleem: The Anthropocene is a term that was coined by a guy named Paul Crutzen, who won a Nobel Prize in Chemistry for one of the people who discovered the ozone hole. Because of the discovery of the ozone hole, he said, look, we have made such a huge impact on the planet that we've literally made a hole in the structure of our stratosphere, and we should be thinking about the way in which we measure geological time, like we talked about the Jurassic period, and so on, and so forth, like the dinosaurs, that we should be talking about the current period where humans have evolved to this point a new geological period. And he termed it the Anthropocene. So what he suggested was that the Anthropocene was going to begin sometime in the industrial revolution and that we are in it now. So we are kind of in that period. There's a big debate now actually going on among the geological community as to making this official that we are going to call this the Anthropocene because we have made such a huge impact on the planet. And the indicators are very clear in terms of the amount of materials humans have produced compared to

natural materials and so on. That's what is defining this current conversation around the impact of humans as whether humans are a part of nature. They certainly are at one level, but they have also invented a whole new period in time for the planet.

Darin: Yes, which is scary and exciting at the same time. My favorite word right now is integration. Knowledge, experience, integrating, being a better version of myself, you're educating me today. I'm absolutely walking away from this conversation as a better human with a bigger aptitude now and awareness for certain things. The extraordinary miracle of us as humans is just mind-blowing and that we can have, again, the scary part, we can have this kind of impact on this beautiful blue planet, which frightens me to my core, but excites me to my core about let's focus on better systems, better solutions. That is everything that I want to put my energy towards. Let's look at these things critically, every bit of it, and then make choices from a broader aperture from a deeper knowledge and try to look as far as we can into the future rather than just reacting to what we think is bad and to what we only think is good, but we haven't done our homework. That's got to be an exciting time for you.

Saleem: Yes, I mean, I remain quite optimistic that human beings have the wherewithal to come out of this period if we are much more willing to go into the depth and understanding of what I call moving towards environmental literacy, not just environmental awareness. Even with climate change, we will have the ability to adapt. It will not be the kind of world we would have wanted it to be without the level of emissions that unfortunately, we are moving towards. But we as a species will be able to find some mechanisms, and that's why there's much more focused on adaptation now around those kinds of conversations. So that's what we need to focus on. I think there needs to be a conversation about a pragmatic trajectory for humanity, which is kind of navigating that space between warning and caution, and constructive optimism around how we can innovate.

Darin: I agree. That is something we need to as we elevate ourselves, and we stay creative out of the solutions, out of the knowledge, out of facing. It's a plague of us too, even as in interpersonal relationships. It's easy for us to get angry, it's harder for us to turn inside and go, what's my responsibility here? So we need to do this as a society. Listen, hey, we messed up in some ways, we're causing some problems, let's just put some brakes on it. Let's look at this and start figuring out some pragmatic ways to maybe do some better things for ourselves and for the world because we're definitely connected. Last kind of thing I want to ask is as they read Earthly Order, as an individual, what can they expect? We can only hope and help and to realize that it's got to help them and as an individual, as well, as well as kind of a better view of the world, what should they expect if they pick up Earthly Order?

[00:43:10] What can Earthly order do for you?

Saleem: Well, I've written Earthly Order for a general audience, and I've got a lot of personal anecdotes of my own life journey, which will hopefully make it much more engaging and some of the lessons I learned both growing up in Pakistan, as well as my schooling in the US and living in various places. But I've also tried to make sure that I do not dumb down the material to the point where we miss the nuances and the detail. So I would hope that the reader, especially the first part of the book, which deals with natural order, it does have a lot of science in it. But it's science, which is fairly accessible and I've tried to make it user-friendly. And I've tried to not just have theoretical discussions, but actually give people

tangible ways in which how this connects to functional issues in their lives. Then the second and third parts of the book, the second part is on social and economic order, and the third part is on political order. So I would say Earthly Order is quite unique as a book that it actually brings together, the full range of Natural Science, Social Science, and Political Science all together with a very practical perspective of dealing with planetary problems. So the goal is really to provide that what I'm calling environmental literacy so that people have the depth of understanding. There's this famous saying we attributed to Alexander Pope, "A little learning is a dangerous thing." I've tried to make sure that they have that level of depth so that they don't have a shallow understanding or sound bites, that they're actually being able to use the material with that level of persuasion. And that's why I went with Oxford University Press as a publisher because they went through peer review, but also they have a trade arm where they can still be reaching a much broader audience and it's for that. And I'm donating all the royalties for environmental literacy programs. So this is a labor of love. I hope that it has the impact in that regard.

Darin: Amazing. It's been such an amazing conversation, Dr. Saleem. I want to thank you for your time, your efforts, your education, your willingness to go into these areas and face these problems in a much more bigger way so that we can actually do something better for the world and the planet. So I'm eternally grateful.

Saleem: Thank you so much, Darin. It's a pleasure and an honor to be on your show.

Darin: Thank you, man.

[00:45:39] Podcast Outro

Darin: Thanks for tuning in to this episode of The Darin Olien Show. I hope you took something valuable away from this conversation that will help improve your life in some way. If you'd like to learn more about my incredible guests, you can find all of their information in the show notes on my website. If you enjoyed this episode, or even you didn't like it, please rate this podcast. The team and I value your feedback so we can continue to give you the most value possible. We want you to get the most out of every podcast. So please rate, subscribe, share anything you feel called to do. I truly appreciate it, and I love and value your support. So, thank you, and I'll meet you in the next episode.