**Episode #26**

**Speaker 1** [00:00:01] Welcome to the Cabrera Lab Podcast.

**Speaker 2** [00:00:06] How you doing?

**Speaker 1** [00:00:07] I'm doing awesome.

**Speaker 2** [00:00:08] That is one hell of a shirt. Thank you. I feel like I'm talking to two of you. There's two sets of eyeballs looking at me.

**Speaker 1** [00:00:15] It's a lot of eyeballs.

**Speaker 2** [00:00:17] I like it, it's funky. It's got some style.

**Speaker 1** [00:00:20] And I got a haircut from all the mountain stuff.

**Speaker 2** [00:00:24] I'm aware you're looking a little more...

**Speaker 1** [00:00:26] little more presentable.

**Speaker 2** [00:00:27] but still mountainy. You still have the mountain look. Yeah. So today we're going to talk about something that something a few people have actually commented on from our last episode. Yeah. If you remembered our last episode.

**Speaker 1** [00:00:41] What was that one?

**Speaker 2** [00:00:42] the path to Bueno. So in that episode, towards the end, we actually mentioned our systems thinking in the Alps, hiking in the alps trip. Several people have commented, what the hell? Tell us more about that. Like, what does it mean? Why nature, systems thinking? What can we learn from nature about systems? What the hell were you actually doing relative to systems thinking. People are wondering, you know, A, why would we do that? What did we actually do? What did actually learn? And I think what's interesting is you were the guide. I was temporarily your student.

**Speaker 3** [00:01:23] No, no, no.

**Speaker 2** [00:01:25] I learned a lot, you probably learned a lot from guiding it and also you had a plan of how you bring together these two worlds your academic expertise and systems thinking and thinking generally and you know your wide your widespread expertise and knowledge about nature and guiding and nature and those kinds of things.

**Speaker 1** [00:01:46] I think you could think of it from a bunch of different angles, from a personal angle. It's just my, I have a deep desire to bring together two worlds that have been really meaningful to me. So the world of my early life as a mountain guide and spending a lot of time in the mountains, where I feel like I learned. you know, so much about systems from the mountains. The mountains are such an amazing teacher, and nature is such an amazing teacher of systems and systems thinking, in a sense. And then my scientific life as a professor and as a, you know a scientist and a researcher in complexity and systems, thinking and system science in those fields. And, you know, just personally I want to bring those two together because they're both beautiful worlds that I've lived in. And from a purely pedagogical or teaching point of view, the mountains are just great teachers. The mountains are the perfect medium to teach systems thinking in, much better than a classroom or, you know, really anything, even a... a business or, you know, we've taught in restaurants, we taught in businesses, we taught in a lot of different environments, but the mountains are just so dynamic and so complex and yet so simple that they teach, you know, it's just like having a living DSRP systems thinking classroom. So.

**Speaker 2** [00:03:38] Well, yeah, and I'm wondering, just before we talk about this most recent trip, I've had the benefit, and many people have heard, when you speak. You actually start with, you didn't start as a systems theorist, you actually started as a mountain guide. And what you said in the beginning is, what you learned about systems you learned from nature. So maybe let's start at the beginning. that relationship that you saw and how that took you on your path, and then we can talk about the kinds of things that I learned and that we talked about in the actual, the most recent trip, because I think a lot of people haven't had the benefit of that connection that you've talked about.

**Speaker 1** [00:04:19] Yeah, I mean, I think my first teacher in systems was my father, and he grew up in the jungles of Columbia and was very, you know, loved nature and things like that. And so I think he taught a lot of those lessons early on. But then that love of nature and the jungles kind of transferred to the mountains for the high mountains and And that was, like you said, I mean, that was where that's my alma mater. The mountains are my alma matter. I mean I went to Cornell and things like that and got my PhD and all that. But, and Cornell's an alma mater as well. But my real, the alma mater that I feel connected to is the mountains of the world. them. You know, it felt like college to me. The mountains felt like college and it felt like where I learned to understand systems. And in large part, it was because as a young kid, like, you know, 17, 18, 19, as an outward bound instructor. and guiding in the Alps and different things in Scotland and was... trying to get a handle on all these different systems that you have to keep track of, right? So not only, you know, in the mountains, you have keep track the weather systems and the snowpack and what the snow pack is doing for avalanche danger and, you now, the geology of mountains and, you know so there's all the physical mountain stuff and then there's the gear that you have to deal with, right, for search and rescue systems and rope systems and. uh, you know, you're just, just the layering system that you wear in the mountains of your clothing and the way that those layers dynamically interact with each other to cause either warmth or coolness or, you don't stop you from sweating or get you sweating, you know, and, um, or prevent you from getting wet or cause you to get wet and, you And then there's the biophysical systems that you have to care about. You have to understand what's going on in your body and your metabolism and fuel the furnace so that you can keep climbing. And then on top of that, there's this whole other dimension of the social systems that you're dealing with, whether you're guiding people or whether you just with a group of people. A lot of people don't know this, but one of the biggest reasons that expeditions fail isn't because of some technical challenge, like the challenge of the mountain, but it's actually because people on the expedition don't get along. So it's the social dynamics of expeditions that cause a lot of problems. Yeah. So, you have, you know... The systems of physics, the systems of chemistry, the system of biology, physiology, the systems of psychology, it's a mental game. I mean a huge part of my own hearing is a mental game.

**Speaker 4** [00:07:42] That's true.

**Speaker 1** [00:07:42] Um, and then you've got, you know, metabolic systems and, you know, all those kinds of systems. And then you got the social systems, you know, uh, and the dyadic dynamics of your partner climbing. And then the larger group dynamics when you're with larger groups. And then, you have all these meteorological systems, you know like weather, which also weather, I learned so much from weather. I mean, weather is, I often think that every person who studies systems thinking and system science should study weather patterns, because weather at the micro and the macro level is so dynamic. It's so dynamic and so interrelated and everything is sort of relative to everything else, you know, whether you have cold or hot air masses or whether you time. high pressure or low pressures at the macro level on the whole planet, all the way down to micro regions that are being, whether being caused by mountains and whether being caused by terrains and things like that. All of these systems that I just talked about have to be synthesized into one system of systems, not a bunch of systems, right? But a system of systems what I call an SOS, a SOS rather than BOS, right. A lot of times we deal with a BOS a bunch systems, but we need to deal with the SOS system of systems.

**Speaker 2** [00:09:18] You love your acronyms. I do love acronyMS. But that's because they're all separate, but they're actually very related.

**Speaker 1** [00:09:26] They're interconnected, and they impact each other, and you can have one thing that leads to another thing. I mean, a whole expedition can be just completely destroyed by, I mean it sounds almost like a parable, but by like a pebble in your shoe.

**Speaker 2** [00:09:44] Oh, no, I believe it.

**Speaker 1** [00:09:45] You get a blister. A blister really kind of is a bummer. And everything else can be going really great and your foot is just killing you or something like that. So kind of in a parable-like way, you've got to pay attention to the little things because the little things make the big things and you have to pay attention to relationships and the interconnections between things because One thing leads to another, and there's webs of causality. It's never just one thing. It's usually a web of things. And everything in the mountains is like that. Everything is ecological. Everything is a web of interconnectedness. And you can't get away from those webs. You can't away from that ecological interconnectedness, whether you're talking about the social group and the ecology of the social room, or whether you talking about your metabolism, or whether you're talking about the snowpack. or whether you're talking about the weather, it's all interconnected and systemic. So teaching in that environment, it's just kind of a no-brainer.

**Speaker 2** [00:10:55] Definitely, and I think also what's interesting is, of all those different interconnected systems, you have some influence over some of them and no influence on others.

**Speaker 1** [00:11:08] Yeah, that's a super great point too. Like, you know, early on, I think I learned it from Covey, you when Coveys seven habits or something, but I think it was actually Eisenhower that came up with it and maybe Cove took it from Eisenhower. I'm not sure. But the idea of circle of influence versus circle of control and you know the idea that that we work within our circle of influence. And the more you work within your circle of influence, the more you can affect the things you're concerned about, certain circle of concern. So lots of us have a very big circle of concern, but, you know, we start with a pretty tiny circle of influence. And then the more we focus on our influence, the more can grow that influence. And some people, like the president of the United States, maybe has a bigger circle of influence than their circle of concern, right? Like the things they care about are smaller than the things that they have influence over. Um, I think in the mountains. You just can't be a control freak. It just can't be like and yeah, and you'll learn it the hard way if you try to be because You're not in control Like nature is in control. The weather is in. Control the mountains are in control And the beautiful thing is they're not controlling so, you know, they're just doing their thing

**Speaker 2** [00:12:47] They are what they are.

**Speaker 1** [00:12:48] They are what they are. And I think love reality comes from that. Love reality comes from it's almost like something that the mountains teach you to love reality because you're not in control. You're a tiny speck on a very large mountain which is somewhat ironically a tiny spec on a much larger terrain.

**Speaker 2** [00:13:11] Well, I think it's interesting because, yes, you can't be a control freak, but, I mean, I've just experienced this firsthand, but there is a moment where it becomes very clear where you have some influence over your outcomes. So like how I tie my boots, the kinds of socks I wear, how much I put my feet up at night to sort of get the swelling down and the blister. You know, like. So there's this funny moment, there was a funny moment for me where I was like, okay, these are the things that are just real and that I'm interacting with them, but here are the thing I can do.

**Speaker 5** [00:13:49] at my level.

**Speaker 2** [00:13:55] to improve my experience, to take care of the parts of the things that I can take care of. So there's that distinction that sort of happens at that moment, but yeah, the whole control freak thing is good, and I think it's good.

**Speaker 1** [00:14:10] It's really good.

**Speaker 2** [00:14:11] Let me put it this way, it forces you to interact with the reality.

**Speaker 1** [00:14:15] And then if you interact with that reality long enough, you learn to love it. Yes. And you learn the love not being in control. That's true. And you learned to love being able to have whatever agency you do have, whatever influence you do, have to determine your comfort and your level of comfort. And that level of discomfort isn't always guaranteed. And you start to realize that the mental models that you make are hugely influential on your level of comfort, your level of happiness and the changing environment doesn't have to affect that attitude. You know, it doesn't have to effect the way that you perceive the world. You get to choose a lot of that.

**Speaker 2** [00:15:06] I think that's right and I think so just fast forward to the trip that we just took, right? the idea of there was a moment of acceptance of the natural discomfort that was part of the reality. But what's interesting is once you get to that point of realizing, oh, part of this experience is going to be discomfort and also comfort, and then you embrace that and you move through it much differently than if you resist it. Because if you resist it and you're sort of forcing yourself to, you're trying to force your belief or your mental model on the reality. That's not, it doesn't work. It just doesn't.

**Speaker 1** [00:15:57] It doesn't work. And that's the beauty of that immediate feedback, right? Like the mountains are always in nature generally, but I sort of think of it as the mountains, but the sea will teach you the same thing. And, you know, the jungles will teach it the same and the desert will teach the same thing. But, but for me, it was mountains. And um, you know the mountains just, they're going to give you feedback constantly because you're going be bumping up against the reality of the environment that you're in. You're bumping up against the.

**Speaker 4** [00:16:29] Literally.

**Speaker 1** [00:16:30] Literally every second of every day you're bumping up against that reality and and realizing You know that that you got to go with it

**Speaker 2** [00:16:40] not only that you have to go with it, but that going with it is going to make it easier.

**Speaker 1** [00:16:45] Yes. If you try to fight it, you will lose. It's much harder. And you will. Which I love. Like, I love...

**Speaker 2** [00:16:52] Oh my god.

**Speaker 1** [00:16:52] I love that if you try to fight it, you'll lose. I think everybody should learn that lesson.

**Speaker 2** [00:16:59] It's actually, it sounds simple when you say it, but in an experiential moment, it's actually a very transformative lesson to learn, and it actually then obviously translates into wider life.

**Speaker 1** [00:17:15] Yes, it teaches humility. It teaches, you know, it rids us of hubris and And it teaches you kind of like you were saying, the micro, what we say all the time, in complexity science. You know, like a lot of the lessons that I learned in the mountains, I kind of learned experientially and then found similar ideas in complexity science and the study of systems and system science. So we say, all the times, the micromakes the macro, right? the little things. add up and create a web of causality to these macro level emergent properties, right? So you know, if you don't take care of all the little things, they start to add up. So you start to learn experientially things like one of my favorite quotes is wash the glass like a baby Buddha, meaning something as sort of innocuous and seemingly unimportant as washing a glass. Imagine. doing that with such care and such focus and such awareness and such attention that you were washing it as if you were watching the baby Buddha. Something as sort of important and sacred as the baby buddha. But it's just a glass, right? So you're taking time and attention on how you tie your boots. How you tie boots, like each lace. can be tied differently in order to get your boot to fit differently, right? How you pack your pack is going to determine how comfortable it rides for the entire day. Every step of every day of your whole day, which could be 15, 20 miles worth of steps, hours and hours and that pack is gonna be on your back. and the way it rides is going to be determined by the way you pack it in the morning.

**Speaker 2** [00:19:18] Well, and the outcome of that day is shaped by that decision at that moment.

**Speaker 1** [00:19:22] I mean, my father unsuccessfully tried to get me to make my bed as a child, and he was never much to his chagrin, you know, he was never successful with that. But you know the mountains taught me that when you get to camp and you get your tent Are you set up your tent or your camp? You have everything dialed. Everything goes in the same spot. Every night, I have a whole system for the way that I set up my camp, I set my tent, I set-up my backpack, I set, I know where everything is at all times because, you know, at night, when it's dark and you need this little thing or that little thing, you know oh, it's this bag's zip, it's right there, I got it. I know everything is. I know what everything is, if it's, you now, downpour, I reach in on the right side, that pull my raincoat. I don't have to unpack everything and get my down jacket wet and all kinds of other things wet. I just know where everything is. So you dial things in and that requires, ironically, awareness, which is what we teach. Metacognition is what call it in science. And we know from the science that just a tiny bit of a metacognitions can make huge differences in your personal and professional life. So. You're learning those things, but you're learning them in a way that can't be denied.

**Speaker 2** [00:20:48] Two things, relative to what you just said. So, wash the glass like a baby Buddha is, is to me the best example of the way you do anything is the way that you do everything, right? So the way pack your pack, the way make your bed, the way do this, the the way to do that, you need to be thoughtful, right, and you need realize the second part is, the way I pack my pack in the morning, The effect of that is later, so there's a delay between the cause and the effect.

**Speaker 1** [00:21:22] Yeah, cause and effect aren't neighbors on a timeline, as we say in system science, right? Right. Yeah, so the delay is a huge part of it, right. If you don't take care of the way you put on your socks and you have a wrinkle in your sock or you have little burr in your sock, well, that's not going to cause a blister right away. It's going to a blisters five hours from now. If you don't wear gaiters or what are sometimes called shorties, like little gaiter's, you know, that go a lot, sorry, maybe people don't know what a gait is.

**Speaker 2** [00:21:58] Now we gotta slow down for people, because I didn't know what they were.

**Speaker 1** [00:22:00] Yeah, so gaiters are used, sometimes there's long ones that go from your knee all the way down to your boot or there's short ones that we call shorties that just cover the top of your boot. The long ones are for snow and things like that.

**Speaker 2** [00:22:14] So there are little things that you put around your ankles that connect either to your shoes or your sock, and they keep stuff from going into your shoe.

**Speaker 1** [00:22:22] Yeah. So when you're hiking, you're going to get little rocks and little burrs and little things, pine needles or whatever is in the environment or just snow, which is going to, you know, over time can make your socks wet, and then that makes your feet wet, which makes them more blister-prone. You know, so again, all these little interactions. But again, there's delay. There's delay in all these systems, right? Yeah. So if you don't... do those things with the understanding of how things are interconnected, right? Then if you don't drink water before you're thirsty, thirst, for example, is a late signal of dehydration, right. So people say all the time, I have a headache. I have this. I have that. I don't feel it. Drink water. we say all the time, drink water. when you're done drinking water drink some water. The answer to everything in the mountains is drink water, right? Because there's this delay and your body can't really function well if it's not hydrated and there are all these forces that are dehydrating you.

**Speaker 2** [00:23:34] Well, and I think that it's not something that people understand, which is often the out like the outcome. So in the mountains, the outcome of your day starts in the morning when you're repacking your pack when you putting your boots

**Speaker 1** [00:23:46] than the night before, and yeah.

**Speaker 2** [00:23:47] Right, but the outcome of the trip started two months ago when you bought all of the stuff, when we got all the stuff we needed and made sure we had a checklist of the stuff that we were gonna need when we were on the mountain. But in real life, people, I don't think people realize that there is usually a delay between a cause and an effect. For sure. That the thing you're experiencing today, that probably started a long time ago.

**Speaker 3** [00:24:11] Yeah.

**Speaker 2** [00:24:11] right? And, and so it's about challenging that widespread belief, it's about challenging the mental model that you have at that moment, which is this is happening right now.

**Speaker 1** [00:24:21] Suddenly syndrome is, you know, then suddenly, you know, I suddenly I got a blister, suddenly I got a headache, suddenly, I got a divorce, suddenly. I got, you know, my kids, the drug addict, suddenly all these things happen to us. Suddenly I lost my job suddenly. Well, most things don't happen. Most things don' happen suddenly. Most things have a web of causality that lead to them.

**Speaker 2** [00:24:50] over time.

**Speaker 1** [00:24:51] over time.

**Speaker 2** [00:24:51] Slowly, they happen.

**Speaker 1** [00:24:53] So are, you know, the mountains teach this stuff, whether you like it or not, they almost guarantee learning because the pain because what it'll do is it'll just increase the pain and you know we learn when

**Speaker 2** [00:25:11] we suffer.

**Speaker 1** [00:25:11] Let me suffer.

**Speaker 2** [00:25:14] The thing is, it's up to you whether or not you listen.

**Speaker 1** [00:25:16] and it's up to you whether you suffer.

**Speaker 2** [00:25:18] Well, yeah, but yes, it's up to you whether or not you suffer, but it's also up to whether or not you listen to what it's teaching you. And that's true every day life.

**Speaker 1** [00:25:27] That's what love reality is all about.

**Speaker 2** [00:25:28] Feedback we're getting we can either listen to it or not. Yeah, if you listen to you're gonna evolve you're going to learn you're Going to do better

**Speaker 1** [00:25:36] Yeah, and then the other thing, so we're talking about some of these real basal things, the other things that the mountains do really, really well is they teach DSRP really well. When you're out there, you see DSRP in action because nature is doing DSRP all the time. Nature is distinguishing and not distinguishing. Nature is grouping things and breaking things apart. nature is in real action, reaction all day long. And nature is perspectival, right? Nature is, there's so many different things in the ecology that are kind of working their way through the system. That's right. And all those things have perspective.

**Speaker 2** [00:26:17] Nature exists in DSRP. We think in DSRP, there's this, you know, the idea that we build mental models to approximate reality, reality is nature. So when we're thinking about these things, there's all kinds of things that nature can teach us about our own selves and obviously everything else that we're doing. So one of the things I was thinking about is when I got back from the trip, I started to think about what are the sort of big lessons that I personally learned or saw in nature? One of them... was the one that you sort of talked about in the beginning, which I think was, to me, the most obvious, which is the micro makes the macro. And the way that that played out was when there were moments that were hard on the trail and I would look up and see how far we had to go, you literally said, just focus on one step at a time. So the idea is, You know, if you focus on the micro when the macro is overwhelming, that's how you get to the goal, to the vision, to the summit.

**Speaker 1** [00:27:29] Yeah, I mean, Mountaineers have a thing called the mountain rest step, which is literally kind of placing your body weight on your skeletal system for sometimes a microsecond to take weight off of your muscular system, right? So there's a particular way you kind of configure your body in between each step. And sometimes that step is very quick from step to step. But sometimes that step, like at altitude, that step might be, you might be taking several breaths in between each step, which makes it even more important to have your weight on your skeletal system. So you kind of lock your knee in the mountain rest step. Hard to describe in words, but easy to show, like in, you know, in walking. But the idea is that, you now, really you climb mountains one step or one. handhold at a time. You know, you don't get overwhelmed by swallowing the whole elephant. You take one bite at a kind of thing. And eventually, if you keep taking one step, repeat. There won't be any more steps to take. You'll be at the top.

**Speaker 2** [00:28:46] I mean, what's interesting is, so before we left for the trip, I was like, oh, I'm going on this trip, and I just kept thinking my unit of analysis was the trip. And then I got there and I was, like, oh, we're gonna get to this hut. And then it became, oh, I'm gonna get up this hill. And then as it got harder, I like, oh, I'm to get up the next hundred feet. And then, I got to, I just gonna take a step, and I'm just gonna keep taking steps. And then eventually, I'll get there. But when something is hard like that, or challenging, I should say, having that ability to see that that micro, literally, one thing at a time, one thing at time, which allows you to focus, that's how you're going to get to the outcome you want when you're struggling, when you are challenged. Otherwise, it starts to seem impossible. And then your mental models take over, and then your fears take over. And then you actually get into a space where. you're actually probably not going to be able to do it, right? Because you're focused outside of that moment of step to step to stop.

**Speaker 1** [00:29:54] And you start to realize, or maybe you don't until you do. you start to realize how much of it is a mental game. Yes, that's the other thing. I have a good friend that was in professional baseball. And when he left professional baseball, it wasn't necessarily the game itself. It was the mental game, a lot of times, people don't realize a huge part of working at a high level is your mental game and Mountaineering is a huge mental game because if you let... that mental thing start, you know, that hamster start running that wheel, you won't finish, you won'l climb anything. It's just havoc. It'll be havoc, you'll be like, yeah, I'm not gonna make it or blah, blah, and you'll find every reason not to do it, you now, and that's probably why a lot of people don't do it. You know, it's because of that. So the mental game is huge, and it's a system. And it's a system that you also are not in control of. So all the things we said about the mountain is true of the mind. Oh, that's true. And so learning that you're not in control of this thing, you have influence. Yeah. But it's doing a bunch of stuff that you have no idea what it's doin' or why it's doin' it. It's feeling a buncha stuff, it's afraid of a bunch a stuff, it's you're building whole worlds that you are not even aware of. And the more that you can get a little bit of awareness, a little of metacognition, a little understanding the DSRPs that you're doing, then the more you can have some influence over which direction it takes you and what things you feel and don't feel and what predictions you make and what decisions you make.

**Speaker 2** [00:31:57] Yeah, I mean, I want to talk about mental models for a bit, because that was one of those pretty pivotal kind of lessons. So I obviously know that we're always building mental models. I obviously no, that we have the ability to take feedback in evolve and change our mind. I'm pretty aware of mental models and medical condition.

**Speaker 5** [00:32:20] That's her profession. That's actually what it is.

**Speaker 2** [00:32:25] And that being said, as we're doing something that's challenging, one of the things that was interesting was helping other people with their mental models. Like, you can do this. Because the minute you believe you can't, then you actually probably can't. You can do that. any kind of moment where... And what was interesting is, in some people in the group, you see a moment where what they're thinking isn't matching the reality of the situation. And so we do the work to say, well, here's what's real. You're going to have to take another step, another step. We're going this much further. We're gonna get there. We just have to stay focused and keep the mental game going. And the other thing was not just about how you thought about the challenges, but what people were afraid of. And, to be fair, myself included, having never experienced the experience, having fears seemed completely rational at the time, because it was unknown, right? So if you imagine, and I'll be specific, if you imagined the first time where you're a path and there's a drop where I guess you call it exposure. And you think, and we will talk about this for a minute, but like you think that if you lose your footing at all, you're gonna tumble down that whole hill and die. And we had this exchange on the trail, right? Where I was, I didn't realize I was afraid of heights until very late in life. And I didn' realize it, I just didn't know it until the first time I was sort of out and about. And what's interesting about fears, like you were saying is, It's not a mental model, it's not something I can control, meaning the fear comes. But what I can't control is my mental model about how I'm gonna get through it.

**Speaker 1** [00:34:29] Yeah, I mean, and you can, you can kind of question some of the mental models that are driving the fear, right? So if you're, if you, if you're on a trail, the trail's, you know, 36 inches wide. Yeah. And you have, you know, a thousand or two thousand feet of exposure on your left, right, the exposure meaning, you know, it goes down. Yeah. Two thousand feet on the left. Yeah. You know, people that are... aren't used to that are gonna be keep looking there and keep thinking if I fall, if I make any misstep.

**Speaker 2** [00:35:05] I'm done.

**Speaker 1** [00:35:06] I'm dead, I'm gonna fall 2,000 feet to my death. I don't know, is that true? If you fall on a 36 inch wide trail, most of the time you're gonna just kinda like drop down on your butt. On the trail. On the trial. Yeah. Right, so sometimes I'll say to people like, do a little kinda pretend fall here and let's test obviously, you know, if you fall off the side of a rock face, you know that's different but. In this particular situation, there is exposure, and it's true, if you leapt off that trail, you would fall 2,000 feet to your death. You know, chances are that's not really, it's not gonna be like Princess Bride where you just kind of, in the movie, where they just keep rolling and rolling and rolling down the hill. Like small things are gonna stop your fall and you're probably just gonna kind of like become a clump on the trail. That's probably what's gonna happen. Um, probably, I mean, like, you know, I'm not, I've not saying you can't fall off of a trail and, and, yeah, and that exposure isn't scary. It is, but you can kind of temper the mental model that's driving it because we have these imaginations and then our imagination is if I made one misstep whatsoever, it's over, I'm done. I'm dead. I am going to die. Probably not true.

**Speaker 2** [00:36:48] Right, so let's take that example. So we're on a 36 inch wide trail, which is not that wide by the way.

**Speaker 1** [00:36:56] If you think about it like imagine for example if you're on a balance beam Yeah, and the balance beams this much like a you know, right and you go. Oh, that's pretty thin That's thinner than my foot. Yeah now make a 36 inch wide balance beam That's a lot.

**Speaker 2** [00:37:16] Okay, that's why.

**Speaker 1** [00:37:17] It's a 36-inch wide balance beam, right? All of a sudden, you're like, I could probably walk this.

**Speaker 2** [00:37:25] Right, so let's...

**Speaker 1** [00:37:26] But now put that 36-inch wide balance beam in between two Eiffel towers, and then it becomes scary. Yeah. But it's the same 36- inch wide balance being, right? If I put up, think of it this way, if I took a 36-in board and I put it on your driveway flat, you would walk across that board like it was nothing.

**Speaker 2** [00:37:50] Yeah, I wouldn't even think about it.

**Speaker 1** [00:37:50] You wouldn't even think about it. But if I put a 36-inch board between two buildings, 5,000 feet up, all of a sudden, that 36- inch board feels scary.

**Speaker 2** [00:38:03] Yes, but in my defense.

**Speaker 1** [00:38:06] No, it's not a credit.

**Speaker 2** [00:38:07] In the Eiffel Tower example, the mental model that if you fall, you die is right.

**Speaker 1** [00:38:12] Yes, in that case.

**Speaker 2** [00:38:13] In that case, the mental model is right.

**Speaker 1** [00:38:15] Well no, not really. If you fall off the board, if you fall onto the board which is 36 inches wide, you're not going to die. That's true. You're going to just fall onto the board.

**Speaker 2** [00:38:30] Okay, so yes, so you see what I'm saying?

**Speaker 1** [00:38:33] If you imagine falling where you're going downward, what we imagine is somehow that that physics doesn't happen, that the physics launches you into space. Yes. Right? That's our imagination of what's gonna happen. Right. If I trip.

**Speaker 2** [00:38:56] But the reality is...

**Speaker 1** [00:38:57] The reality is you're gonna kinda just kinda go down in a clump.

**Speaker 2** [00:39:01] Yes, that's right. Okay, so let's go back.

**Speaker 1** [00:39:04] Again, I'm not saying that there's not possible, you know, if you're walking on snow and the snow collapses under your feet, well then that's different. That's the trail collapsing, right? Yeah. You know, so I'm, I am not saying there aren't dangers. There are dangers. I'm simply saying that sometimes our imagination gets away from us and we start thinking all these crazy things.

**Speaker 2** [00:39:32] So let's talk through the psychology of the moment on the trail because I think it's interesting. So we're walking. I have a mental model, which is that if anything goes wrong in the slightest moment, I'm going to roll down and die. That's not actually true, but that's what I believe. So then I'm walking, and then I actually, without intention, lost my footing and fell on the trail. At that moment that I fell on the trial, that was real world feedback that, hey, by the way, your mental model's wrong. You're not going to fall down and die. So then I was able to get back up, and Micro Makes the Macro focus on one step at a time and get through, get over that fear part and just focus on getting through it, right? The other thing that was nice that I thought was interesting was, there was a moment where without speaking, the entire group of 12 people, without any speaking, started taking care of the one behind them. So there's like this emergent thing where everyone was in the same situation. We all had different levels of fear. We all have different mental models. Some of us, like you, are like a mountain goat and you can do anything. You're not afraid. there was this sort of inherent thing that happened where we realized collectively that we were all in a situation and we needed to help each other. And I thought that was really a nice example of how those things can sort of just happen naturally based on the environment and the feedback that the environment was giving us. One thing that nature really does reinforce is the idea of your mental models, the degree to which they're aligned with it, and then it will, as you said, give you feedback. And then you can revise and deal with it differently, go through it differently.

**Speaker 1** [00:41:41] It does.

**Speaker 2** [00:41:42] So to me, nature teaches you micro makes the macro. It teaches you really sort of firsthand when your mental models are a little out of whack. It gives you some sort of feedback that gets them back into whack. And then you take that up further and you realize everything you're doing is a mental model, right? Terrified fear of a ferrata is a metal model. And then your favorite one, there's more in you than you know. Because our mental model is that we can't do things, and then you're, you know, you challenge that and you say, well, there's more in you than you know. If you start to believe that you'll push.

**Speaker 1** [00:42:19] That was, that was Kurt Hans. Oh really? Yeah, he was founder of Outward Bound. He was fond of saying there's more in you than you know. There it is, there's way more in all of us than we know. And the mountains teach us that, you know, you think that you can't do something and then you do it. You know, once you do something that stretches your mind, your mind doesn't go back. Once you've stretched the mind, it stays stretched, you know. And then you redefine what is challenging, which is why challenge is so important. Challenging ourselves constantly is important because it expands the mind and it expands what we're capable of.

**Speaker 2** [00:43:14] And it changes that sort of base level of mental models of by yourself, right? So now I'm like, Oh, I did that. So now, I can go and do this. So you're building off of the prior experience.

**Speaker 1** [00:43:27] Yeah, I mean, once you did the roped pass, you know, that was pretty steep and you kind of were doing some climbing. It was fucking terrifying.

**Speaker 2** [00:43:38] It was terrifying.

**Speaker 1** [00:43:40] But you'll notice, once you did that, walking on a trail with exposure was like a piece of cake.

**Speaker 2** [00:43:47] Yeah, that felt easy.

**Speaker 1** [00:43:49] Like, so that was the day before scary, then you did something scarier, and then all of a sudden that wasn't scary anymore. So now, you can walk all day on trails with exposure.

**Speaker 2** [00:44:04] That's right.

**Speaker 1** [00:44:05] Our mental models are very powerful, and it sort of shows you how powerful your mental models are. Yeah. Because that trail with exposure didn't change. No. What changed was your mental model.

**Speaker 2** [00:44:18] of it and of me.

**Speaker 1** [00:44:19] of it and of yourself and of your abilities, so the trail didn't change, the mountains didn't change.

**Speaker 2** [00:44:26] But that can be extracted to life generally. I mean, you know, that's why you say that the mountains are the best place to learn about everything. Because everything you learn in the mountains totally transfers into the rest of your life. I mean without any effort.

**Speaker 1** [00:44:44] It's a near perfect metaphor for life.

**Speaker 2** [00:44:48] And then the whole no challenge, no change kind of thing. Like if you don't challenge yourself, you're never gonna change, you're not ever gonna grow. Even if it's horribly terrifying some of the challenges. But if you get through them, then you can do a whole nother set of them. All right, so we talked a lot, we started in the beginning where you were saying everything you learned about systems you learned in nature.

**Speaker 1** [00:45:11] Not everything, but a lot. A lot of what you learned. A lot the early introduction to systems.

**Speaker 2** [00:45:22] So what would you say if people said, okay, so what's the takeaway from all this? Why do we learn about systems in nature? Why is nature our greatest teacher? Why should we do things like we just did? Like, what's, what the point?

**Speaker 1** [00:45:37] Well, I mean, I think it's like if you're going to teach a class on cooking, you should probably do it in a kitchen. Yes. Right? Like, it's harder to teach cooking in the living room. True. So if you're going to teach a class on systems... pretty good place to teach is the mountains because it's all systems. It's not like manufactured human mechanical systems that can be isolated and nothing in the mountains is isolated. Everything is interconnected. Everything is a web. Everything is relative to everything else. I mean, that's why weather is such a powerful thing to learn about is every high pressure is relative with some low pressure, right? Every hot. environment is relative to some cooler environment. Right. So heat is relative cold is relative, everything's relative. Everything's relative relative means, you know, related everything is every everything that we think of as high is relative to something low, every ridge has a valley, you know, everything has some other thing that's causing it to come into existence. And When we think about Distinction Systems Relationships and Perspectives, or DSRP, I think one of the things that I love about seeing it happen in the mountains, seeing the mountains do DSRP is as soon as the mountains do DSRP, they undo it.

**Speaker 2** [00:47:23] What do you mean?

**Speaker 1** [00:47:24] It's dynamic. It's the idea that you never step into the same.

**Speaker 4** [00:47:28] Um.

**Speaker 1** [00:47:29] river twice you know it's it's so dynamic i mean i i was on a course in the sierra nevada and there's this huge wall right and it's a place that we do a thing called the king's repels a big repel it's a free-hanging repel right so you're you're literally hanging in the air well the reason you're hanging in there is because a huge chunk of this wall and when i say huge i mean Bigger than a building size rock. It's rock.

**Speaker 4** [00:47:57] Oh wow, yeah.

**Speaker 1** [00:47:58] fell out of this wall. Well, that rock that used to be part of the wall is now a huge, like bigger than a building size rock. So we distinguish that rock. At one point it was part of wall, but now it's this absolutely massive boulder, right? And nature distinguished. right? Things are distinguishing themselves. At the same time, that rock is sitting on a beach, which is made up of sand, which used to be rocks that have just been completely eroded, and now are tiny, tiny pieces of sand which make up a beach. A part-hole system, right? So that rock someday will be sand. that huge rock, which used to be part of a face, indistinguishable from the face, is now distinguishable as this huge boulder, and will someday become something else. Beach sand. Yeah. Right? The beach in the middle of the wilderness. Next, on a river, and this isn't an ocean beach, it's like a river beach, right? Yeah. So. Trees clump together, they're individuated, but then they clumped together to survive. Krumholtz communities at high altitudes clump together to survived the gale force winds and the biting snow. The roots of anything are like the relationship between the thing, that plant and the soil. But then you realize that there's another relationship between those roots and the soil, which is the hyphal mats, the hyphae, the fungal hypha that create a relationship between the roots and soil. So you're just constantly sort of seeing the fractal nature of the fractal and temporal nature of the mountains. And so the mountains distinguish and then they undistinguish. The mountains, they break stuff apart and then lump them together. Every action is the reaction of some other action. Yeah. Right? And then has a subsequent reaction. everything is perspectival from where you're sitting, whether you're sitting, you know, whether the soil or whether the elk or whether you're the wolf or whether you are the plant. Yeah. So it's just so dynamic. Nothing is static.

**Speaker 2** [00:50:50] in nature.

**Speaker 1** [00:50:51] but everything is DSRPing constantly in this flow. And that's what your brain is doing. Your brain's doing that and it's very dynamic. And because we want to control. We lock things in. We get locked in to one way of doing things, to one of thinking about things. But your brain is very fluid, and can do things and is doing things whether you like it or not in a very fluid and dynamic way.

**Speaker 2** [00:51:27] I think that's interesting because it's this parallelism between your mind and nature. And I think we say that quite a bit, and it's probably confusing to people. But what you're getting at is, if you use nature and reality as sort of synonymous, things exist in DSRP. Things are distinguished. Things are organized into systems. Things relate to each other, perspectives, all that. And so there's that. And then there's how we think about those things. And the way we think about them is we make distinctions. We organize things into systems. We make relationships. We take perspectives. And I think that parallelism is exactly why, I don't know if I'm hearing you right, which is why you're saying nature is the best place to learn it because of that symmetry or that parallel ism.

**Speaker 1** [00:52:20] Yeah, I mean, the parallelism is already there because of evolution, right? Our brains didn't develop like separate from the universe. Our brains, didn't developed separate from this planet, even with gravitational forces and all, you know, the things that apply just to this planet. Our brains evolved within the evolution.

**Speaker 4** [00:52:42] Yeah.

**Speaker 1** [00:52:43] of everything. And so it's not like our brains kind of took a different structure than the rest of evolution. It took a structure that was part of evolution and part of the reality and the fabric of reality. So it's like our brain is programmed differently than reality. The only difference is we can make shit up. That's right. So all we want to do is try to get our brain to be in alignment with reality. And reality is giving us feedback all the time. So it's helping us get in alignment with it. But our brains can have hallucinations, just like AI has hallucinations. Our brains can do all kinds of things. We can be afraid of things that we don't need to be afraid of. We cannot be afraid things that do need to afraid of, right? We can have But yeah. In effect, hallucinations, biases, fears, aversions, emotions, all these different things. So we want to just try to get our brain in alignment with the reality. And the great thing is your brain and reality speak the same structural language, which is DSRP. And that allows us to get in alignment. And the mountains teach us that. The mountains show us that, the mountains give us examples of that. The mountains give feedback that help us reconcile that.

**Speaker 2** [00:54:17] Well, the mountains give you that feedback in real time, exactly when it matters in a way that you have to listen to.

**Speaker 1** [00:54:23] Yes.

**Speaker 2** [00:54:24] right, which is why I think it's such a unique experience.

**Speaker 1** [00:54:27] When the student is ready, the teacher will appear. That is the mountains. The mountains will teach you exactly what you need to learn when you need the learn it. And if you don't learn it, they'll teach it again.

**Speaker 2** [00:54:43] and hopefully you'll learn at that time.

**Speaker 1** [00:54:45] And if you don't learn it, they'll teach it again. Yep. They're imminently patient. Yeah. Because they've been around for a long time.

**Speaker 2** [00:54:54] That's true.

**Speaker 1** [00:54:55] And they give zero fucks.

**Speaker 2** [00:54:59] What does that mean?

**Speaker 1** [00:55:00] They did the no fucks given, really.

**Speaker 2** [00:55:04] The mounds don't care.

**Speaker 1** [00:55:05] The mountains don't really care. They just exist. They just exists. Like they don't care. They're not like, people say, yo, the mountains are trying to kill me. No, they're not.

**Speaker 2** [00:55:16] They just be in mountains.

**Speaker 1** [00:55:17] They're just being mountains.

**Speaker 2** [00:55:19] It's kind of like Bruno, Bruno's just being a dog.

**Speaker 1** [00:55:21] Yeah, like they're not, they're not trying to make your life difficult. They're not you know, not trying to make you're life difficult, they're just being, they just existing. They just are. And you're existing in them and they're giving feedback because they're existing. Yeah, it's not personal.

**Speaker 2** [00:55:44] No, but I think the crux of it is listening, purposefully choosing to listen.

**Speaker 5** [00:55:50] I don't know where it's at.

**Speaker 2** [00:55:51] And then evolving how you're thinking about things based on what you heard. To me, that's like the nugget of being out in the mountains and learning from them.

**Speaker 1** [00:56:02] Yeah, it's not, you know, when we think of listening, we think of these little things, right? It's not just listening with your ears. It's turning your whole person into a sail. Yeah. You know, like, if you think about deer, they have these really big ears, and they kind of turn them like a sail towards the sound. Yeah, it's making your whole person into a sail, your whole mind, your whole body, your listening to what the feedback is.

**Speaker 2** [00:56:36] taking it in.

**Speaker 1** [00:56:37] And taking it in, feeling your body, feeling your mind, feeling, your feelings, feeling all the different things that you're sensing. And when you do that, the system will tell you about itself. The system will you about it itself. And then you'll understand the system. And then, you can work within that system. I mean, I'm always amazed when you look at, in foreign countries, you look at these crazy intersections where there's going all kinds of crazy traffic. And you'll see an old woman just like in Vietnam and Bangladesh or something, you know. Old woman will just slowly walk across, looking straight down at the ground. There's zooming traffic everywhere. And they'll just walk across. Well, why is she able to do that? Whereas the tourist is like trying to run from place to place and usually causing all kinds of havoc. Well, it's because that woman understands the system. She understands there's simple rules to the way that traffic pattern is moving. And if she goes slowly, the traffic will avoid her, because each individual agent has a rule, which is avoid the other. But if you go quick across that system, which is what a lot of Westerners think, we have a mental model that the less time we spend in this chaotic space, the better we'll be. but that's not how that system works. So if your mental model's in alignment with that system, then you can live in that system all day long. But if your mentally model's out of sync or out of alignment with the system, then you're gonna be in danger in that systems.

**Speaker 2** [00:58:25] is your reality and your thinking aren't matching up.

**Speaker 1** [00:58:27] Exactly. And I think that's the case with everything. If you if you, if you look at the mountains, if you look, I mean, I'm not a big ocean guy. I'm a mountain guy. But I was watching the thing the other day about sharks and like, you know, this woman, she just kind of like turns towards the shark in the water, this huge, dangerous shark, and turns right at him and then just puts her hand on his nose and pushes it down as she's. Well, that's a woman that understands that system, right? And so she's safe in that system because she understands. Now, I'm sure there are 17 different things she could do that not understanding that system would put her in great danger, right. So if her mental model's in alignment with that system because she's been listening to that system and getting the feedback from that system then she's gonna be fine. But if it's out of alignment, she's splashing at the surface and looks like an injured seal, then that shark is literally going to come and all of a sudden she's in danger. She's lunch. She's Lunch.

**Speaker 4** [00:59:37] That's not good.

**Speaker 1** [00:59:37] It really is that simple and I think all of life is that way, it's just all of life is in that way. It can be very simple if you're listening.

**Speaker 2** [00:59:47] I think that's a great place to end. That's a, great, I might write that one down. Can be simple if you're listening. That's pretty heavy. No, not heavy. It's meaningful. It can be simple if you listen, because if you listen you can be in sync with reality and then everything's going to be different.

**Speaker 1** [01:00:08] But not listen like in school where they hit you with a stick if you're not listening. Not that kind of listening.

**Speaker 2** [01:00:15] That was not hit-posted.

**Speaker 1** [01:00:16] It's like, no, like listening, like really deeply understanding, listening to the system because the system is constantly teaching you about itself. And that's the same for corporations, like if you're in an organization, like the organization's teaching you, about itself all the time. Or your children, your children are teaching you about themselves all the time. That's true. if you're listening. Not listening to argue, not listening to be right, listening to what the system is telling you. We always say this to our students, stop trying to solve problems and start understanding systems. And the best way to understand a system is listen. Again, not with your ears, listen to what system's telling you about itself because it's constantly giving you feedback.

**Speaker 2** [01:01:05] Well, I think that we more than answered the hey, tell us a little bit more about the trip question.

**Speaker 1** [01:01:12] That was a lot.

**Speaker 2** [01:01:12] Which is good.

**Speaker 1** [01:01:14] Kind of went all over the place.

**Speaker 2** [01:01:16] You know, that's how it is when you're talking about the mountains and nature. And we went all over the place and the Alps. So that's good. We've paralleled it.

**Speaker 1** [01:01:23] Get out on the mountains and join us next year on our trip.

**Speaker 2** [01:01:27] but by the right shoes.

**Speaker 1** [01:01:30] He can help you with the shoes.

**Speaker 2** [01:01:31] All right, we'll see you next time.