**Episode #4.mp4**

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

**Speaker 2** [00:00:05] Hi. Hey, How you doing?

**Speaker 1** [00:00:07] Good.

**Speaker 2** [00:00:09] You sure?

**Speaker 1** [00:00:09] How are you?

**Speaker 2** [00:00:10] Hi. I'm awesome. Nice. I've been doing lots of stuff in the gym. I've been down there really working on. You know, I'm now into yoga.

**Speaker 1** [00:00:22] Yes.

**Speaker 2** [00:00:23] This is not news. I started being interested in yoga very late in life, I might add. Yes. But. I just ordered a T-shirt from my favorite yoga studio, and it says, Practice is everything.

**Speaker 1** [00:00:38] Yeah.

**Speaker 2** [00:00:39] And I was thinking about that. Generally speaking, who practices every day? And I was thinking about, like, just people in our family and what we're practice. Like, I'm practicing yoga, you're practicing trying to get to the splits, which means you're doing something every day for a certain amount of minutes because you're trying to sort of train your body to be able to do things just like I'm trying to train my body to be more flexible. And, you know, Lena's practicing for her marathon and Carter is practicing lacrosse. And so it's thinking about this idea that practice is so prevalent in our daily life in terms of like, athletics and sports. Yes. But I would argue that we probably need practice in all kinds of things. And I noticed you were talking the other day and I remember who you're talking to about making that analogy to the mind. Right. But I would I would imagine that that was not an easy conversation because people don't associate practice with sort of cognition and thinking.

**Speaker 1** [00:01:38] Yeah.

**Speaker 2** [00:01:38] So I just wanted you to tell me a little bit more about that, like what you were thinking about and I think you were talking about you made some analogy to basketball or something.

**Speaker 1** [00:01:48] Yeah, I think I use basketball, but you could use anything. I mean, and everything sort of like this if you if you follow the the historical trajectory of things. Right. So like when I started climbing the, the, the way you trained for climbing was you went climbing.

**Speaker 2** [00:02:07] That was it.

**Speaker 1** [00:02:08] That was it. We didn't there was no concept that you would go train or practice climbing. You just climbed. And the more you climbed, the better you got at it. And that was it. And nobody thought like, hey, what if I, you know, made a fingerboard and started practicing just, you know, isolating my finger strength or isolating certain moves or what if I had a gym that what if I use the gym, you know, but used it as a climber, you know, And and I think, you know, there probably was a time long before us where people thought that way about music, you know, about playing the guitar and about all the things we practice. In fact, I think there probably was a time where people felt that way about all sports and basketball. You know, the best way to be basketball players is to play basketball. Right. But somebody along the way kind of looked at basketball at a metta level, you know, Metta Basketball.

**Speaker 2** [00:03:09] That morphed.

**Speaker 1** [00:03:10] Into medieval.

**Speaker 2** [00:03:11] Minnesota.

**Speaker 1** [00:03:12] Yeah. And and they said, well, well, you know, what's basketball fundamentally made up? Like, it's a complex game. But if we could reduce it to sort of patterns, right. There's the pattern of dribbling both hands. You know, there's the pattern of passing. There's a pattern of shooting, you know, close up shots, far away shots, you know, so that you kind of break down the game into a bunch of different patterns. Right. And and then you practice those patterns. And I imagine like somebody had to be the first person to be like, Hey, what if we practice dribbling? You know, like, what if we practiced shooting? What if we practice? What if. What if? Rather than getting 20 or 30 shots in a game, you could get 200 shots in and a half an hour. Right. Right. Will that make you better at shooting? Right. And what instead of only playing, you know, the guitar when we're on a Friday night gig? What if you, you know, practice your chords over and over and over again, and you got, you know, a couple of hours of practice, right? Sounds kind of basic, but yeah, we live in a world today where thinking hasn't entered into that world yet, hasn't entered into the world that we understand basketball or weight training or yoga or any of these other things that we take for granted that we take as sort of, you know, obvious.

**Speaker 2** [00:04:39] Right.

**Speaker 1** [00:04:40] Thinking. Has not entered that world yet.

**Speaker 2** [00:04:44] Meaning we haven't entered to a place where we believe that you can actually practice something to get better at it. Like any sport, if you practice certain things.

**Speaker 1** [00:04:53] Yes. Yeah. Number one that. Yeah. That we don't even know that you could practice it. Right. And number two, if if we did know that. What would we practice? We don't even know what to practice. Right? So we're not even at the point where I mean, we are at the point, but most people don't realize we're at the point where we can break the game of thinking down into something, the equivalent of dribbling, you know, shooting, passing. And if you practice those things and then and then also practice doing it in, you know, game scenarios that you can get really, really good at it really, really fast.

**Speaker 2** [00:05:33] Yeah. No, I mean, that makes sense. But it's kind of interesting because it's, it's hard to, to retroactively think about that moment where somebody said, totally, we could do this. I think for a long time it was sort of like the great man theory, right? Leaders are born, athletes are born, thinkers are born. You're either this or you're not. And it's not. You have no agency over. You have no.

**Speaker 1** [00:05:56] You're just.

**Speaker 2** [00:05:56] You are.

**Speaker 1** [00:05:57] What, either one, Kobe Bryant or you're not. But Kobe Bryant practiced a lot.

**Speaker 2** [00:06:02] You know, so. Michael Jordan. Right, Exactly. So did. I don't know. I don't know a lot of athletes. That's okay.

**Speaker 1** [00:06:10] But I think if you if anybody sort of thinks about something, especially if you've been around long enough to sort of see the the ebbs and flows of things, you've probably grown up in something that, you know, at one point in time nobody thought to practice. And today they do. You know, whether that be, you know, like like I like I mentioned climbing but I think all kinds of things.

**Speaker 2** [00:06:37] Yeah. I mean, also I think you have this this. Almost sort of misunderstanding. Sometimes people think of practice as something that's sort of punitive, like go practice this, go run last, go do this, go do that. And it's it's not always thought of as something you have control over to actually get better at something you care about.

**Speaker 1** [00:06:59] Totally. And I think that's that's an unfortunate thing which I think probably that the school sports did that right for sure. Everything seems punitive. Like that's where I learned, you know, running was not a fun thing because running was always used as like a punishment, right? Sprints and yeah. So, yeah, you don't want to think of practice as punitive. I think ideally you want to think of it as creative as a creative act. So I notice even for example, when I'm doing yoga, which is, you know, not easy for, for me, you know, and I notice that when when I'm like, burned down and, you know, it's not that enjoyable, but when I'm just being creative and I'm like, Hey, I'll try this, you know, I'm glad my body feels like doing this, you know? And and I'm not like, there's this move and I have to practice. And I'm like, Hey, my body feels like doing this right? Then I, I actually get better stretches, I get better, you know, kind of releases. And I also it's more fun and the time passes much faster. Yeah. So, you know, when we were kids a long time ago when I, when I was a kid, so I grew up in a big family, big Colombian family. And we my mom had one one rule, and that was you had to be at dinner every night, you know, otherwise we were pretty much off in the woods or, you know, practice or whatever. But we had to be at dinner every night. And we sat around the table as a big family. And my dad had this this like, habit that I just thought was normal because I grew up with it.

**Speaker 2** [00:08:44] But yeah.

**Speaker 1** [00:08:46] And that was it. Like, you know, we'd ask him some question and he would, he would use the food at the table to like build the answer.

**Speaker 2** [00:08:54] Not normal.

**Speaker 1** [00:08:55] It wasn't until I, like, you know, slept over at friends houses when I was like, you know, 12 or 13 that I realized and have dinner with their families that I realized like, not I didn't know and nobody does this right? But he would we would be like, Hey, dad, you know, what was the Korean War all about? I need to be like, you take this piece of bread and you take this piece of chicken and, you know, you put a fork in both sides of the bread and the chicken make like a little barbell, and you're like, the fork is like the relationship between the two countries, which is, you know, Korea and China. And then, you know, take this other piece of bread and you build this whole thing and then he break down the fork. So your.

**Speaker 2** [00:09:36] Mother loved.

**Speaker 1** [00:09:37] That. Yeah, it was crazy. I mean, like salt and pepper shakers. And he would just, like, build this model.

**Speaker 2** [00:09:41] Okay, so your father would pick up the food salt shakers, I'm sure. Your mother. Didn't love it, and all of the brothers and sisters loved it because he was actually literally manipulating the food. But what was he doing? Like, what was he trying to do for you all? Yeah.

**Speaker 1** [00:09:55] I don't even know if my mom didn't like it. Like, just it was just like a normal thing. He was just building. He would, like, visualize the ideas as we talked about them. And so it was it was it was kind of like the extension of using your hands to talk. But it was like he took it to the Nth degree and he would build physically build the idea so you could see the ideas. The amazing thing is that it had a kind of a profound effect on me. I think it's why I study, you know.

**Speaker 2** [00:10:23] My yeast and.

**Speaker 1** [00:10:24] What I study. I mean, the first thing it did was it kind of gave me it made it so that I could see ideas. Right? Not just have them, like, locked up in my head, but I could see the ideas because they were. And I could look at them. Yeah, but right then it made the ideas kind of tangible because they were physical things. You could. You could add to it. You could say, what if, what if we, you know, added that to it, you know, and he would incorporate that in so we could add to it, we could subtract from it, we could break the bread in half and think about it as two factions or, you know, whatever. Right. And so it made it very it made ideas very tactile. It almost made ideas like, you know, like Minority Report, you know, like, yeah, whatever.

**Speaker 2** [00:11:08] It was like really around.

**Speaker 1** [00:11:10] So it was like, that was that was like my dinner table, except it was analog every night. It wasn't digital. Yeah, it was like analog.

**Speaker 2** [00:11:18] What was it, the.

**Speaker 1** [00:11:19] 70s in the 70s. Yeah. So, so and then as a result of that, because ideas were these things that you could like play with, this is my point of this whole story.

**Speaker 2** [00:11:31] There is a point that I found.

**Speaker 1** [00:11:36] Because ideas were these things you could see and touch and play with.

**Speaker 2** [00:11:40] Yeah.

**Speaker 1** [00:11:41] It was fun. It was creative. It was it was fun to play with ideas.

**Speaker 2** [00:11:46] Was it? You mean like thinking about.

**Speaker 1** [00:11:48] Thinking was fun.

**Speaker 2** [00:11:49] Thinking about.

**Speaker 1** [00:11:50] Stuff. Thinking about stuff was fun. It was creative. It was tangible. It was visible. Yeah, it was. And this is so critically important to to the work we do. And ironically, you know, the science has proved out all of these things that he was doing at the table to be, yeah, empirically valid in terms of the way that the brain works and what the brain needs to learn and understand things to be able to see, to be able to.

**Speaker 2** [00:12:19] Yeah.

**Speaker 1** [00:12:20] You know.

**Speaker 2** [00:12:20] Touch them and move on.

**Speaker 1** [00:12:21] Touch.

**Speaker 2** [00:12:22] And because all those transpire differently. Exactly. If you're touching stuff and moving it exactly.

**Speaker 1** [00:12:27] From cortical human Oculus or the cortex man and how the brain is wiggling that.

**Speaker 2** [00:12:32] Yeah, I thought that might get us caught.

**Speaker 1** [00:12:35] Yeah. Cortex manner cortical your monkey.

**Speaker 2** [00:12:37] When you spell it out, it's like super color fragile.

**Speaker 1** [00:12:40] It is difficult to spell. But yeah, that's just the way your brain is hooked up to your like the, the way your brain's hooked up to your body. And we have more neurons hooked up to our eyeballs and our tongue and our hands than, than anything else, which.

**Speaker 2** [00:12:56] I listening is not our strong.

**Speaker 1** [00:12:58] Suit. So yes, which is strange because if you think about it in school, you know, yeah, most of what we are doing in school is talking and listening. Yeah. You know, and what we need to be doing is seeing. Yeah. And touching and moving stuff, stuff around and even tasting. Like I've always said, you know, a lot of students have trouble with chemistry turning chemistry into a cooking class.

**Speaker 2** [00:13:27] That would be fun.

**Speaker 1** [00:13:28] It's done.

**Speaker 2** [00:13:28] I would have done you.

**Speaker 1** [00:13:29] I have like a world full of chemists.

**Speaker 2** [00:13:31] I had a geology professor that had us lick rocks. Yeah. Like, literally to see if they were salts. We have no allegations. Yeah, I thought it was strange at the time.

**Speaker 1** [00:13:40] But Piaget, the great psychologist, an educator and a child psychologist, was he he said to a child, the world is something to be licked and and what he was communicating about that it sounds gross, but it's actually very meaningful and kind of wise of children, because what they're doing is they have so many sensory things on their tongue that they're actually getting like as much information into the brain as possible. So they're experiencing their world by putting it in their mouth. Yeah. And that's how they're that's how they're learning their world. That's why children put everything in their mouth.

**Speaker 2** [00:14:23] What was interesting is when you were talking about that, I was just remembering like our children when they had highchairs. Yeah. And they're like, you know, they're tasting all the different textures and things. But I also was thinking about remembering that those moments where they were literally just practicing the act of picking something up and the determination that little babies have to like. Really get that thing to their mouth. Right. And I was thinking about something else you said to me a while ago. Because I have this perfection complex. When I said we were talking about practice makes perfect. Yeah. And you said, No, no, no, no, no, no.

**Speaker 1** [00:15:03] It's nice. Makes effective. Yeah. And, you know. Yes.

**Speaker 2** [00:15:07] And I think that's what you said. Practice makes progress. Yeah. That's smart. Which actually was very smart. And I will tell you, and I don't say these things, especially not on film, that that really was right. And I may not say you're right a lot.

**Speaker 1** [00:15:22] That's true. Yeah, I'll tell you when I get it.

**Speaker 2** [00:15:24] You were right.

**Speaker 1** [00:15:25] Because today I was right.

**Speaker 2** [00:15:29] No, because I was struggling. I was, like, beating myself up about something I had been practicing. It might have been been in yoga. And you're like, Remember, perfection? Is this crazy mental model unattainable idea that causes us to do things differently?

**Speaker 1** [00:15:47] It's kind of a terrible idea. It's a.

**Speaker 2** [00:15:48] Terrible thing.

**Speaker 1** [00:15:49] And it's not effective. No. And in fact, evolution has a totally different strategy and it's much smarter. It's called Satisficing. A guy named Herbert Simon.

**Speaker 2** [00:15:59] Satisficing.

**Speaker 1** [00:16:00] Yes. Satisficing. It's like evolution and nature works on a totally different paradigm than perfection, and it works on the power paradigm of of satisficing rather than optimization. So if you think about it, the whole engineering profession works on optimization making optimal, which is kind of like, you know, the perfect.

**Speaker 2** [00:16:20] The perfect, the best solution.

**Speaker 1** [00:16:22] Yeah. And, and like most of the life, I'm not saying that there aren't situations where you need to be optimal, but. But most of life. Is really a satisficing situation where it's like good enough. When I used to work for. It's a terrible story, but I used the word thrill series. That's not a terrible story, but I like the Forest Service and that's going to make this Forest Service sound bad. But. But we used to work bill trail in the Pacific Northwest and and in Montana and stuff. And there was an old saying which is like it's good enough for the Forest Service.

**Speaker 2** [00:17:05] But.

**Speaker 1** [00:17:05] Which is like a satisficing model, right? Like you're not you're it's not done, but it's done enough.

**Speaker 2** [00:17:11] But let's try to make that into a positive. So, for example, what you're doing is sort of cutting trail, you're.

**Speaker 1** [00:17:17] Building.

**Speaker 2** [00:17:18] Trail and it doesn't have to be manicured and perfect for it to be useful. And what you're doing.

**Speaker 1** [00:17:23] Exactly. It's kind of a it's a satisficing model. It's a it's a it it works.

**Speaker 2** [00:17:28] Well, you know, I once read a story called The Good Enough Mom. It was an article written by Anna Quindlen. And it actually I read it a great time in my life when I just had, I think, our second child and I was making myself crazy, thinking the house had to be completely clean and I had to be completely showered and like everything had to be perfect, like Norman Rockwell. And I read this story and and there was one line in it that said some of the happiest kids grow up in the dirtiest house, totally flaccid.

**Speaker 1** [00:17:57] So it our house was a mess when I was growing up.

**Speaker 2** [00:18:00] I'm good. She said. Don't be the perfect mom. Be good enough, mom. Totally. Because then you'll be relaxed enough to be present in the moment and actually enjoy your children and enjoy your life.

**Speaker 1** [00:18:11] Dopey, and.

**Speaker 2** [00:18:12] Let yourself off the hook for this perfection thing.

**Speaker 1** [00:18:15] Yeah. So Satisficing Satisficing isn't saying like, don't you know, do your best and stuff like that. It's just saying like most of the time, you know, seeking total perfection is kind of a waste of time. And, you know, we see this with our Ivy League students a lot, so we know very well we love. But but they come programed with this perfection paralysis and they're going to release some masterpiece and they're not going to show you anything until they release their masterpiece. And inevitably, that's not really the way masterpieces work. They work on kind of radical incrementalism and, you know, like, yeah, show me somebody that's, you know, comes up with an overnight success or an overnight masterpiece. And I'll show you like 20 years of hard, radical incrementalism and iteration in practice that led to that overnight success. So, you know, I think it's we're always trying to get our students to be like, hey, you know, show us, show us what you got so far, and then we can give you feedback.

**Speaker 2** [00:19:25] And then you can.

**Speaker 1** [00:19:26] Get and then it can get better. You can it can, you know, incremental kind of progress.

**Speaker 2** [00:19:30] So you practice even writing. Yeah. Thanks so much. Practices and everything. Everything you start. We were saying that we started this whole thing with we can practice not just physical stuff but the cognitive or mental stuff. Yeah. So that's very helpful because that means that we can not fall prey to the idea that we're just born with certain capabilities and thinking skills versus we can actually develop them just like I can dribble.

**Speaker 1** [00:19:59] But I think it's far more, far more remarkable than that.

**Speaker 2** [00:20:02] Really? Yeah. You're saying I wasn't remarkable?

**Speaker 1** [00:20:05] No, no. I think it's even more remarkable. I think it's I think it's like.

**Speaker 2** [00:20:10] How so?

**Speaker 1** [00:20:10] So big.

**Speaker 2** [00:20:11] How so? How is it so big?

**Speaker 1** [00:20:13] Because it's one thing to say, hey, you know, we can we can practice climbing. What a what an epiphany that we've had. We can practice climbing rather than just do climbing. We can practice basketball rather than just do we can practice underwater basket weaving.

**Speaker 2** [00:20:31] Is that a thing?

**Speaker 1** [00:20:32] Yeah, I think so. I think it's an Olympic event with.

**Speaker 2** [00:20:36] Indoor water skiing.

**Speaker 1** [00:20:38] My mother always used to use that. She was from Boston and she I think that's a Boston.

**Speaker 2** [00:20:42] She had a nice sense of.

**Speaker 1** [00:20:43] Who she would always use. Like for some reason she would always use the underwater basket weaving as the as the sort of example.

**Speaker 2** [00:20:51] Of all things.

**Speaker 1** [00:20:52] All things like if you if you want to learn underwater basket weaving like Derek, you can do anything you want as long as it's.

**Speaker 2** [00:20:59] Nice.

**Speaker 1** [00:21:00] And then she would use underwater basket or then they would say like what classes are you taking? Like underwater basket or something like that. I don't even know what I was saying. Why it's so big.

**Speaker 2** [00:21:12] What would you say was so remarkable?

**Speaker 1** [00:21:14] Yes. And so it's remarkable to realize that you can practice something. But here's the thing. When you realize that about thinking, thinking. Is the root of all those other things.

**Speaker 2** [00:21:29] Yeah.

**Speaker 1** [00:21:30] Right. So when Arnold Schwarzenegger says, you know, he focused on his biceps as he and that actually increases hypertrophy, that kind of thing. Right. And he put his mind on it. That's the a lot of people think, well, there is the mind body connection. And that's true. There is the mind body connection. Right. But what they don't realize is Arnold Schwarzenegger had to think that thought before he was able to practice that thought.

**Speaker 2** [00:21:58] Right.

**Speaker 1** [00:21:58] So the thinking was him thinking differently than other people, him having the thought that we could do this differently than anybody has ever done it. That thought.

**Speaker 2** [00:22:12] Led to this.

**Speaker 1** [00:22:12] Led to the the new practice. Right. And and people kind of miss that because they go, there's this mind body connection, but they don't realize like this guy was what he was having deep thoughts about his practice. Right. In weightlifting, in, you know, and so when somebody, you know, whoever Venus Williams, Michael Jordan, when they think about their game. Right. Right. They're thinking differently. What makes them remarkable is not just that they practice their game, but that they think differently about their game. So thought drives all that thought drives all decision. It drives all emotion. It drives all problem solving. It drives all critical thinking. It drives all all the different types of thinking. 30 something different types of thinking. Yes. It drives all behavior. It drives all action.

**Speaker 2** [00:23:08] So, okay. So it is remarkably vague kind of book. I sit corrected.

**Speaker 1** [00:23:13] Well, I wasn't correcting it, but I was simply saying it's cool. In any field it be cool in any way. Like, I'm trying to think of a field like, you see this, too? You see this too, in software? Yeah. So, yeah, there was a time where, you know, sales was done on the phone, then it was done, you know, was done person, person in the marketplace. Then it was done on the phone, then it was done on it. Like, you know, on the phone with an Excel spreadsheet. Yeah. And then people sort of said, okay, well, if people like Marc Benioff or whatever started Salesforce, they sort of said, okay, well, what if we, like, looked at the patterns of sales, right? And broke it down And if we could break that down and then we could program it, you know, we could we can scale a sales software that that represents a sales process.

**Speaker 2** [00:24:01] Right.

**Speaker 1** [00:24:01] And then people could get good at that process, right? Yeah. So there was a mo there was a time when sales was this organic, totally organic thing. And then somebody had the thought to look at the underlying patterns and break it down. And that leads to things like Salesforce. And then people said, Well, yeah, but that could never be done for marketing. Well, now we have Marketo and we have all these other these platforms for marketing. Right. So, so we thought is driving all that thought is driving the ability to look at different processes and look for patterns and then reduce those patterns and then scale them into companies or, you know, whatever processes.

**Speaker 2** [00:24:42] Or.

**Speaker 1** [00:24:43] Practices or whatever.

**Speaker 2** [00:24:44] Yeah. Okay. So not to go too deep.

**Speaker 1** [00:24:47] But kind of exciting.

**Speaker 2** [00:24:48] It is exciting. And it and it makes me think when you're talking about all of these underlying these patterns of underlying these processes. Right. And that in order to help other people do them, we have to break them down into their parts and sort of, you know, make them something that's distilled. But then the question is, and this is the deep part. So then what does that mean about if I just want to practice thinking, I don't want to practice thinking about sales, I don't want to practice thinking about basketball or my bicep. I just want to practice thinking, Well, that seems like a totally different beast in some ways. Yeah.

**Speaker 1** [00:25:27] You got to know what to.

**Speaker 2** [00:25:28] Practice, right? And I think that people have a sense of that because like we were saying before, when you say to somebody, we'll think about it. Yeah. There's not a common understanding of what that means to think about it. Yeah.

**Speaker 1** [00:25:42] Well, we know, for example, from our research, we know that there's a parade of law of thinking, which is like an 8020 rule. The like 20% is going to get you to 80%. And that parade of law is five moves. Five moves.

**Speaker 2** [00:25:58] Like thinking, move.

**Speaker 1** [00:25:59] Thinking moves. You do things, you do like a push up. But for thinking a push up that builds your ability, that burns the neural pathways, that to think, to think better about anything. And there's five of these moves. I actually have them in tape on my gym floor, and I practice them, you know, like I practice practicing them to see if that's helpful. Yeah. And so there's five little moves. That you can do. And they're very easy. You can learn them in a few minutes and and then you practice them just like you could learn and push up in a minute.

**Speaker 2** [00:26:32] The analogy is if if I'm trying to practice and learn basketball, I'm going to dribble, I'm going to pass, I'm going to shoot. Yeah. And you're saying the analogy is if I want to really get to.

**Speaker 1** [00:26:41] Dribble, right, you're going to dribble left, you're going to.

**Speaker 2** [00:26:43] Shoot a lob.

**Speaker 1** [00:26:43] You're going to shoot short.

**Speaker 2** [00:26:45] Try one hand.

**Speaker 1** [00:26:45] Yeah, well, right.

**Speaker 2** [00:26:47] Right. And a basketball player. Right. But I can't play a good game a horse.

**Speaker 1** [00:26:52] Right. But the point is as you get more as you get more sophisticated, you're really just doing the basics more. Right? Right. So no matter how good you get, it really is just getting better and better and better at the refinement of those basics. And these five moves are like the basics of thinking.

**Speaker 2** [00:27:09] Yeah. And I will You know what's interesting is, I mean, many, many years ago when we first met, I was sort of skeptical about that. Isaiah Right. That there are these sort of patterns that underlie all thinking is and to be honest, I was a little skeptical. And then and then I started to really. Embed those things into my daily life, like practice, you know, distinct, you know, differentiating things or making sure I was paying attention to relationships between things or forcing myself to remember to take many perspectives like Bob, our good friend Bob. Right. Meaning to take perspectives. So. I guess if it were me, it's good to know or to acknowledge that that seems like a an interesting and somewhat bold claim that there's there's like a set of five things you can do, just five things that give you all of these benefits in terms of, you know, getting better at being a thinker and thinking about anything.

**Speaker 1** [00:28:16] I you'll see why people would think that's a bold claim. But it seems like kind of obvious to me. I think, you know, I'm always surprised when I meet psychologists and stuff like that, people that study the brain or, you know, cognitive scientists or something like that, and they go, well, how could how could it all come down to universal patterns? And you're like, if there's no patterns in cognition, if there's no patterns in psychology, then there is no need for the field of psychology or cognition. Because if you can't, if you can't find pattern, then it's unpatentable, which means it's random, which means there's nothing to study. What are you going to study? So it's sort of it's sort of like they're kind of putting themselves out of a job. If they think that there's no pattern, you're buying them. Why are you a psychologist or a cognitive scientist if you don't think there's a pattern? That'd be like, you know, everything in the universe is random. But I'm a physicist.

**Speaker 2** [00:29:22] I guess.

**Speaker 1** [00:29:24] But then what are you studying? You're just studying, like the imperceptible, infinite randomness of. Yeah, nothingness.

**Speaker 2** [00:29:34] Yeah, no, I get that. I guess for me, it's.

**Speaker 1** [00:29:37] It seems obvious is the point.

**Speaker 2** [00:29:39] Yeah, but it's.

**Speaker 1** [00:29:40] Just that it's pattern.

**Speaker 2** [00:29:41] But it's not. It's not obvious to everybody.

**Speaker 1** [00:29:43] No, no, no it's probably not. But it's.

**Speaker 2** [00:29:45] It's fine that it's obvious to you and that's why you're you, but it's not obvious to everybody. And, and so I think part of our sort of life's mission or vision is to make it obvious to everybody so that they have. And, you know.

**Speaker 1** [00:30:00] I don't mean that it's I don't mean that the patterns are obvious. I mean that I mean that that there are patterns and we should look for them is obvious.

**Speaker 2** [00:30:12] No, really, that's not.

**Speaker 1** [00:30:14] Really?

**Speaker 2** [00:30:16] No one telling you because people believe that thinking just happens and then you're either good at it or you're not. And nobody tells them. And nobody told me in school, Hey, you can get better at that.

**Speaker 1** [00:30:31] Yeah, that's because you listen in school.

**Speaker 2** [00:30:33] Yeah, but a lot of people listen in school. I know, but you're not everybody.

**Speaker 1** [00:30:38] You know, it's funny. There's a story about Einstein and there's a reporter.

**Speaker 2** [00:30:44] Yeah.

**Speaker 1** [00:30:45] And the reporter asked Einstein, they're like, Hey, you know, like, why do you think you of all people, you know, like, you didn't do that well in school and yeah, you really do that well and you're a patent clerk. And why would you, of all people, be the guy that discovers. You know, the theory of relativity know like one of the most important theories, you know. And Einstein said, that's actually quite simple. In fifth or sixth grade, I don't remember the exact quote, but something to the effect of in fifth or sixth grade when when the teacher had covered time and space and like that, all the students understood it and then they moved on to the next more difficult topic. I, because of my limited faculties, got stuck on time and space and thought about it well into my 30s. So he was just stuck before he gave up. So it's just like, you know, we see genius, but he sees, I just I was stuck. And I do. I stopped listening to everything after that, and I focused on, like, just this weird. Inconsistency, you know, between time and space that he couldn't quite grasp, you know?

**Speaker 2** [00:32:06] Right.

**Speaker 1** [00:32:07] So sometimes when we listen to the societal.

**Speaker 2** [00:32:13] Right.

**Speaker 1** [00:32:13] Norms. Right. You know, we get we we believe silly things.

**Speaker 2** [00:32:18] But we believe silly things because we believe silly things and we need to be disabused of those. I agree. Indoctrinated kind of beliefs that hold us back from seeing our full potential. Reaching our full potential. Yeah. And we need to address that. I mean, that's important.

**Speaker 1** [00:32:36] Yes.

**Speaker 2** [00:32:37] I agree. You know, so I was in a student. Yeah, I was a good student. I was really going to school. I loved going to school. I thought school is awesome, etc., etc.. But as when I. You know. Graduated from an Ivy League university with my Ph.D.. I was in many ways not flexible or, you know, a very good sort of. I was very good at like linear and linguistic kind of thinking and sort of indoctrinated into that. But it wasn't until I sort of started to, you know, work with you and, and understand all of the things about your theories and visualizing and all of these that I sort of. I believe.

**Speaker 1** [00:33:26] Yeah.

**Speaker 2** [00:33:26] My brain became kind of more plastic, right? And I got better at thinking about anything. Not just school related stuff, but like anything that I was dealing with. And that's why I think it's important. You know, what does that look like? How do you get better at it? You said there's five things.

**Speaker 1** [00:33:46] You know, not to take a total Tanzim here, But. But.

**Speaker 2** [00:33:48] But that's your specialty.

**Speaker 1** [00:33:50] What was the what really happened there isn't that your brain became more plastic. Your brain.

**Speaker 2** [00:33:58] Was.

**Speaker 1** [00:33:58] Always, always plastic. And you got indoctrinated into thinking in linear and linguistic ways because you got little Scooby Snacks for doing that. Right. So like a seal, you're like, because now that's a small slice, right? And you like them. You get a Scooby snack and then you're like, Hey, what did I get a Scooby snack for? And you're like, I got a Scooby snack for being very linear in my thinking, memorizing scenes and then regurgitating it. And I got it to be snack for, you know, writing what the teacher told me to write, you know. And I mean, I remember one time I, I, we wrote a, we read a book which I thought the book was good. It was called the out The. The Outsiders or something.

**Speaker 2** [00:34:44] Yeah, that's a good book.

**Speaker 1** [00:34:45] That was a good book.

**Speaker 2** [00:34:46] And.

**Speaker 1** [00:34:47] And it had a Tommy boy in it.

**Speaker 2** [00:34:49] And they made a movie.

**Speaker 1** [00:34:50] Yeah, it was a good book. Yeah, I remember resonating with that book, but I thought I loved the book, but I just couldn't, like, make myself write. The report like, I won't because I had A.D.D., I know I had A.D.D. and all that kind of stuff. And anyway, my father and I were building like this. I was the thing I was most interested in. My father and I were building this diorama of, like, the beautiful dioramas in the Natural History Museum of of Native American Villages.

**Speaker 2** [00:35:16] You were building one about Native American Belgians. Yeah.

**Speaker 1** [00:35:19] Yeah. A beautiful diorama. It was like high end for a little kid. And so I turned in the diorama. Instead of the report, the teacher was like.

**Speaker 2** [00:35:32] You turned in a physical diorama about Native American villages to satisfy a book report. Yeah. On The Outsiders.

**Speaker 1** [00:35:41] Yeah. Okay. I thought it was cool, and I was engaged in it, and I was learning, and I thought school was about learning, not I. It took me many years to realize that school is not about learning. That was, like, honestly, one of the hardest things for me to learn was that school was not about learning because I would go to my family's dinner table and it was like all about learning. And then I would go to school where I where everybody was like, the schools and what should you learn? And I would be like, This is nothing like my family dinner table where I learn tons of stuff. This is like you're just getting in your hole and, you know, you're you're supposed to toe the line. And it didn't have anything to do with learning or creativity. Well, so I turned in this thing and, like, my teacher was not happy.

**Speaker 2** [00:36:27] No, no, of course not. Why not? Because the teacher was hamstrung by what was the expectation.

**Speaker 1** [00:36:33] I would have been like, Cool. Ironic.

**Speaker 2** [00:36:35] Yeah, but.

**Speaker 1** [00:36:35] But did you really build this? Because it's.

**Speaker 2** [00:36:37] Pretty. Teachers are locked into the standards and rubrics. They have no choice.

**Speaker 1** [00:36:42] Amazing. This thing was amazing.

**Speaker 2** [00:36:44] Well, and also, I would. I would. I'm going to push back a little bit on what you just said. Okay.

**Speaker 1** [00:36:50] Push.

**Speaker 2** [00:36:50] So the school isn't about learning is what you said. And I would correct that. To say school was about a particular type of learning and a particular set of skills and standards that they're trying to meet. And it wasn't.

**Speaker 1** [00:37:05] To prepare you for.

**Speaker 2** [00:37:07] It, was it to prepare you for.

**Speaker 1** [00:37:08] Ma'am?

**Speaker 2** [00:37:09] Right. But it wasn't it. They're not able to address all the different types of learners, right? That's why they have all these differentiated curriculums now. And. Don't look at me. That's too full of stink, I would say. I'm just saying, like. I mean, I learned a lot in school, but everything I learned was in a very particular type of instruction and education. But I maybe I'm taking personal offense, but I learned a lot. It just I have no.

**Speaker 1** [00:37:42] Doubt that if you put someone anywhere for 15 years, they're going to learn a lot. Yeah, because they're humans. They're human animals and they're learners by nature. So you got to learn a lot.

**Speaker 2** [00:37:52] Yeah.

**Speaker 1** [00:37:53] The question is, how much could they have learned in a more effective school system? The question is, did you learn a lot in 15, 18, 25 years of education? The question is, what could you have learned if we had an effective system that actually tied into the amazing properties of humans as learners? Right. Like we're designed to learn.

**Speaker 2** [00:38:19] Right. And then dealt with it. Right. And dealt with many different modes of learning that dealt with neurodiversity, that dealt with.

**Speaker 1** [00:38:27] Or just didn't deal with, like information, memorization and regurgitation. Right. And control, frankly, Social control.

**Speaker 2** [00:38:35] Well, that's a big word. But it's true.

**Speaker 1** [00:38:37] It's true. It's true. It's true in our age. And it's true for our children.

**Speaker 2** [00:38:43] Yeah. Yeah. I mean, it serves a vital function in that sense.

**Speaker 1** [00:38:46] I'm not against in indoctrinating people into the society because you have to, you know, you have to. You have to. But. But. You know. I don't think that has to go to the to the point of teaching them to think linearly, which is totally eliminated, the antithesis of the way the actual world works because the actual world works in webs of causality, not linear causalities. Right. You know, to think in very bivalent or binary black or white terms, because that's not the way the real world works. The real world is multivalent or gray. So if we're training kids to think in these ways and the real world is not those ways, then that is it's a problem. Misuse of education.

**Speaker 2** [00:39:33] Well, that's a conservative struggle.

**Speaker 1** [00:39:35] Yeah, it sets them up to struggle and.

**Speaker 2** [00:39:37] We don't want them to have to struggle. We want to set them up to succeed. In whatever they want to succeed in, not in whatever normative definition of success that people aspire.

**Speaker 1** [00:39:47] Yeah, I mean, it's not to avoid struggle because the challenge is change, right? So we want struggle. We just don't want unnecessary like bullshit struggle. We want struggle in the areas. Meaningful struggle. Right.

**Speaker 2** [00:39:59] Purposeful.

**Speaker 1** [00:40:00] So I'm going to hold my finger on you and stop you from moving, you know, about to challenge.

**Speaker 2** [00:40:07] And guess what else? Practice is progress.

**Speaker 1** [00:40:09] Bingo. That's a good challenge. Is change, right? Just as progress. Yeah. Yeah, I think that's true. Like, radical incrementalism is the way of the. The universe.

**Speaker 2** [00:40:20] Radical incrementalism that have to be radical.

**Speaker 1** [00:40:23] I think it should be radical.

**Speaker 2** [00:40:25] It makes it.

**Speaker 1** [00:40:25] Radical that you're super into it.

**Speaker 2** [00:40:28] That's what makes.

**Speaker 1** [00:40:29] Syria totally like. It's not like. Like it's not like Che Guevara or something like that. Radical. It's just radical like. It's everywhere. It's fractals embedded in the universe.

**Speaker 2** [00:40:44] Okay. You mean across many levels of scale. There's this incrementalism built in.

**Speaker 1** [00:40:51] Yes.

**Speaker 2** [00:40:51] To everything.

**Speaker 1** [00:40:53] Everything.

**Speaker 2** [00:40:54] And it gets rid of this whole idea of perfection and all of this. It's like we just need to be making progress. Yes. And if we're making progress and we're in good shape, yeah.

**Speaker 1** [00:41:03] Then you're better every day, and then you're good. That's how evolution works. That's how, like, training works. That's how all all skill works. Super important.

**Speaker 2** [00:41:16] Well, so I, I really have appreciated the shift in my mindset from, you know, practice makes perfect, which I was pretty much raised on. I love you, mom. It's okay. And so moving towards and I think as you get older, you have to be kind of more forgiving, you know, of yourself. And so this whole idea that practice makes progress has sort of. Then both motivational in the sense that I'm like, I'm making progress. And also.

**Speaker 1** [00:41:45] Why do you have to be more forgiving as you get older?

**Speaker 2** [00:41:47] Well, if you're indoctrinated into the idea that you have to be perfect at everything, then you cause yourself unnecessary stress. When you're actually doing really well, you're never doing well enough. If you have this aspiration to something that you can't reach, which is perfection. Yeah, right. Perfection is like a unicorn, right? It's just like. It's not. Yeah.

**Speaker 1** [00:42:08] I call that Norman Rock thing.

**Speaker 2** [00:42:10] Right, Exactly.

**Speaker 1** [00:42:11] It's like. Like, I think it's why a lot of people don't enjoy their wedding day, right? Yes, because they. They create this norm. Norman Rockwell is a painter who.

**Speaker 2** [00:42:24] Yeah. Created the ideal American.

**Speaker 1** [00:42:26] Yeah. Ideal American family life. Right. And so it was like this idyllic painting. Yeah. And and if you set up. Whatever it is with these expectations, it's kind of living in the future. And you paint this picture of how things are going to be or how things should be right, whether it's your wedding or whether it's like, you know, whatever it is, doesn't matter what it is, but you're constantly living in the future of perfection or ideal is right. And then you're comparing reality to this fake picture.

**Speaker 2** [00:43:04] This ideal that.

**Speaker 1** [00:43:05] And you're literally like, which one? Which one is better? Fake picture the picture that doesn't exist and therefore shouldn't even be considered.

**Speaker 2** [00:43:15] Or reality.

**Speaker 1** [00:43:16] Reality. Like, you know, it doesn't make any sense.

**Speaker 2** [00:43:18] Right? Right. And reality is.

**Speaker 1** [00:43:21] And then you're disappointed about reality. Yes. Instead of being like reality is pretty cool.

**Speaker 2** [00:43:26] We are great.

**Speaker 1** [00:43:26] We want to love reality.

**Speaker 2** [00:43:28] Just to say we had a great wedding day and we had a hurricane.

**Speaker 1** [00:43:30] We did. I wasn't talking, but I know what I'm saying. Saying we didn't like that. Yeah, we.

**Speaker 2** [00:43:34] Had an American and had an amazing wedding. Everybody was in Wellies. It was.

**Speaker 1** [00:43:38] Good. But that's what I'm saying. Had had you had an idyllic picture of exactly what it was supposed to be? Yeah. You would be bummed out that it wasn't that because, you know, the tent came down and the hurricane came and the trees were falling. And it was.

**Speaker 2** [00:43:52] To be fair, the tent did come down the tent, the 264 tent diverted and flew half a mile down the.

**Speaker 1** [00:43:59] Woods into the forest.

**Speaker 2** [00:44:01] That's not blew away.

**Speaker 1** [00:44:03] But, I mean, you know, we still enjoyed the day. Yes. Because we did there.

**Speaker 2** [00:44:08] As the day.

**Speaker 1** [00:44:09] This perfection picture.

**Speaker 2** [00:44:11] Right.

**Speaker 1** [00:44:12] Which is we want to not do that in life.

**Speaker 2** [00:44:14] No. You want to understand you want.

**Speaker 1** [00:44:15] To love.

**Speaker 2** [00:44:16] Reality, love reality. And that practice makes progress. And that's radical incrementalism at the moment.

**Speaker 1** [00:44:23] So there's a story. About radical incrementalism.

**Speaker 2** [00:44:28] You always have a good story.

**Speaker 1** [00:44:30] And it ties in like, you know, thinking and all the things we've been talking about education, think the way people think, the way they're trained.

**Speaker 2** [00:44:39] But us, it sounds good to us.

**Speaker 1** [00:44:41] So when people discovered it's kind of a Grand Canyon and learned about the Grand Canyon, they yeah, the initial thinking was, you know, how could something what could have caused this huge canyon that is so magnificent. And the thinking is, well, something so large would have needed a very large cause. So they thought it was like a tidal wave or like some kind of huge wave. Cause the Grand Canyon. Yeah. And when scientists came along and said, actually, now it's kind of like radical incrementalism of many, many years over much time, you know, trickle of water on rock, blah, blah, blah.

**Speaker 2** [00:45:18] Yeah, yeah.

**Speaker 1** [00:45:18] You know, the river created it, you know? Yeah, yeah. And they were like, Nah, that's not possible. It's got to be know big cause, Yeah, big effect. So if you have a big fact, you've got to look for a big cause, right? And they didn't see, you know, big effect. Tiny cause over multiple. Over over time. Right.

**Speaker 2** [00:45:38] Interesting.

**Speaker 1** [00:45:39] And so that's not the way we think. We think big, big effects. Big cause, Big cause, big effect.

**Speaker 2** [00:45:45] But sometimes lots of little things.

**Speaker 1** [00:45:46] Over many, many, many little incremental things lead to big things. Like we say the micro makes the macro. Yes, a micro makes the macro. So it's radical. Incrementalism is about the micro making, the macro.

**Speaker 2** [00:46:01] Meaning things don't happen suddenly. Like there wasn't suddenly the Grand Canyon was there because of of title.

**Speaker 1** [00:46:07] You're saying That's actually a great point because there's a great thing in that I think. I think cobble lists talk about this. Yeah. The they call it suddenly syndrome.

**Speaker 2** [00:46:24] yeah.

**Speaker 1** [00:46:25] And suddenly syndrome is like that. These things happen suddenly, you know, like suddenly, you know, I got a divorce. Suddenly I was overweight. Suddenly I, you know, lost my job suddenly, and nothing happens suddenly.

**Speaker 2** [00:46:40] Now.

**Speaker 1** [00:46:40] You know, there's always many preceding factors that lead to that sudden event.

**Speaker 2** [00:46:46] Right.

**Speaker 1** [00:46:46] The same with the genius. Right. Suddenly an overnight success. Not really.

**Speaker 2** [00:46:51] But people don't see that. People don't see that back end of all this stuff, though. It and they.

**Speaker 1** [00:46:55] Don't see it because they don't. We're not trained to see it.

**Speaker 2** [00:46:58] Right.

**Speaker 1** [00:46:58] By schools we don't train people to. We don't train people the way nature works now. And you can practice thinking, which drives everything. Yeah. Which is exciting.

**Speaker 2** [00:47:12] Which means you can get better.

**Speaker 1** [00:47:14] At everything.

**Speaker 2** [00:47:15] Every day.

**Speaker 1** [00:47:16] Not just get better at thinking. You get better at thinking and everything. And you can get better at everything every day. That's the part that blows my mind.

**Speaker 2** [00:47:25] Now, see, that's remarkably big.

**Speaker 1** [00:47:27] That's what I was saying.

**Speaker 2** [00:47:29] But now I see it better. All right. So now we've gotten to that point. Let's. Let's call this let's make this. This is a wrap. That's a wrap. That was fun.

**Speaker 1** [00:47:39] That's it.

**Speaker 2** [00:47:40] That's it.

**Speaker 1** [00:47:41] We're out.

**Speaker 2** [00:47:44] The first.