**Episode #38**

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

**Speaker 2** [00:00:06] How are ya?

**Speaker 1** [00:00:08] as well.

**Speaker 2** [00:00:08] swell.

**Speaker 1** [00:00:09] We're swole. I'm good.

**Speaker 2** [00:00:15] You are good. You're all deep voice, like jazz singer.

**Speaker 1** [00:00:17] Yeah, I got a little bit of a...

**Speaker 2** [00:00:18] a thing. A throat thing. That's kind of sexy, the jazz singer thing. All right, I have an interesting topic for today, and I'll keep it short since you're feeling a little jazz singerish today. I want to talk about cows. Cows. But not just any cows. I wanna talk about the sacred cows.

**Speaker 1** [00:00:35] Oh jeez. Of system thinking. The sacred cause of system thinking…

**Speaker 2** [00:00:38] I think there's eight of them.

**Speaker 1** [00:00:39] There are eight of them that I have found.

**Speaker 2** [00:00:41] that you have found. And so what I-

**Speaker 1** [00:00:43] I'm sure there's more is what I mean by that

**Speaker 2** [00:00:45] So here are the parameters I'm gonna put on you for now. Okay. I think we should talk about all eight, but at sort of a little, like a summary level.

**Speaker 1** [00:00:55] like surface level.

**Speaker 2** [00:00:56] Surface level and then ask our viewers to say which ones they want to hear more about

**Speaker 1** [00:01:02] You could do a whole podcast or a whole semester on each one.

**Speaker 2** [00:01:05] I am aware that we could do that.

**Speaker 1** [00:01:06] In fact, I think we've done a podcast on one of them.

**Speaker 2** [00:01:09] All right, are you ready?

**Speaker 1** [00:01:11] We're going to go through each one.

**Speaker 2** [00:01:12] Yeah, and let's do like a David Letterman top 10 countdown. Okay. I mean, it's almost the new year. We should be fun.

**Speaker 1** [00:01:18] We should probably start with what sacred cows are.

**Speaker 2** [00:01:21] Oh yeah.

**Speaker 1** [00:01:22] Yeah, so a sacred cow is like a, you know, you can't kill it because it's sacred. In systems thinking, there are a few sacred cows, but they're kind of protected for some reason. But there's no real reason. They're actually, they're all wrong. All eight of them are actually things that people say all the time that are absolutely have the effect of sort of miseducating people about how to think in systems and think systemically.

**Speaker 2** [00:01:53] There are beliefs that are held very dear.

**Speaker 1** [00:01:56] dearly.

**Speaker 2** [00:01:57] to people's hearts in the systems thinking world.

**Speaker 1** [00:02:00] world or things experts say that I have no why I don't know.

**Speaker 2** [00:02:07] It seems wrong.

**Speaker 1** [00:02:08] Experts say that have no basis.

**Speaker 2** [00:02:12] But they believe them with all of their hearts and they hold them to be sacred.

**Speaker 1** [00:02:15] They are committed to them and people kind of gather them and in many ways they mislead people into a common misunderstanding of systems.

**Speaker 2** [00:02:26] Okay. So let's start. Should we do a drum roll? No, we'll do number.

**Speaker 1** [00:02:30] Number eight. You should read it.

**Speaker 2** [00:02:32] It's all about content.

**Speaker 1** [00:02:34] It's not.

**Speaker 2** [00:02:35] It's not, we did a whole lot of that stuff.

**Speaker 1** [00:02:36] So the sacred cow is it's all about context. That's what people believe. Yes, that's what people say. That's what people believe. But it's actually sort of wrong headed. It's not all about context.

**Speaker 2** [00:02:47] Why is it wrong and what's the replacement of it?

**Speaker 1** [00:02:49] The simple answer is, the science of it is that context is not this thing that is sort of separate. And that's what the episode we did on context was all about. Context is integrated into the system. And so when we talk about the context, we almost talk about the system and then its context as if the context exists separate from the system, the replacement really would be the episode we did on networks. which is understanding all the nodes and all the relationships and the distinctions and the zooming into the distictions, zooming into relationships, and understanding the different perspectives of the network. And all of those things provide context to all of the other things. So they're co-contextualizing each other. So context is literally sort of embedded in the system. Each object in the systems is being contextualized by the other objects in the System.

**Speaker 2** [00:03:47] When you say there's context, and you sort of group stuff as context, oh, I can do our quotes, context, like we did, what you're actually saying is there's a bunch of stuff, and then we put a bunch other stuff to the side and labeled it context. But that's sort of antithetical to the whole idea of system thinking, because you want to see the stuff and the other stuff to see it all. So that's why it's debunked, it's not good to say it's all about the context. Are you ready for number seven? Number seven, sacred cow. There is no system out there. Or alternatively stated, systems are not real. They are only mental models.

**Speaker 1** [00:04:27] Yeah, this one. This one is a weird one. There is no system out there. There isn't systems aren't real. They're just like these mental models that we have. I This one on the list of eight, the most bizarre to me because there are systems. They exist. They are all around us. There's tons of them. A system is any interacting any two or more interacting things.

**Speaker 2** [00:04:53] And those things could be physical, they could be conceptual.

**Speaker 1** [00:04:56] There are systems all around us. I mean, just walk outside, and there are systems all around. They are real. They're happening. They're not figments of our imagination. What the task in systems thinking is to try to comprehend or apprehend or understand those systems using mental models in such a way that our mental model is as close. to an approximation of those systems as possible. So the goal of systems thinking is to create mental models that are more in alignment with reality, to love reality, to be more in align with those systems that are out in the world. And to say that there's no systems out there is like saying there's not reality, which is-

**Speaker 2** [00:05:45] So I was just thinking.

**Speaker 1** [00:05:46] Zara.

**Speaker 2** [00:05:47] It's like a weird cousin of it, like nothing's real, there's no reality, everything's just sort of, I don't know, metaphysical, poofy stuff. Yeah, and there are epistemologies to poof. That's a technical term, metaphysically poof-y stuff, did you hear that? That was a good one.

**Speaker 1** [00:06:02] Well, you know, I think that the point of the sacred cows, really, is to just let people know that when you hear these things, you know, especially if they're spoken by esteemed colleagues or whatever, then, you know, just just like put a little seed of doubt about the veracity of these statements, because they they are not accepted. They are popularized, but they're not they're they're not. validated or anything like that. And so we should be more careful or be more aware that there is, you know, people get real passionate about it. I'll bet you will get more grief about this particular episode from systems folks out there.

**Speaker 2** [00:06:50] And also, I think I would imagine that there's a little history or a little great debate behind each one of these sacred cows that would be really interesting to read about.

**Speaker 1** [00:07:01] Yeah, no.

**Speaker 2** [00:07:02] They came from somewhere.

**Speaker 1** [00:07:03] They do. And they usually come from what are called the epistemological debates or dualisms, right? And epistemology just means like how, how people approach knowledge, right? So do you believe that there is a reality or do you believe everything's just sort of made up constructivist or, you know, all the ists, all that, all of the isms and ists and all that kind of epistemolgy?

**Speaker 2** [00:07:26] Yeah, how we think we know things.

**Speaker 1** [00:07:27] how we think we know things and, and, uh, and so they're, they tend to be these like big warring tribes that, that are constantly saying, well, no, it's this, no it's, this, and it's usually somewhere in the middle.

**Speaker 2** [00:07:40] So the number six, say number six.

**Speaker 1** [00:07:44] the countdown.

**Speaker 2** [00:07:45] Yes and this one I hear a lot. Everything is connected. This is one of my favorites because I hear it.

**Speaker 1** [00:07:51] alone this one. So it's not. Nope, it's not.

**Speaker 2** [00:07:57] How do you know?

**Speaker 1** [00:07:58] It's just not.

**Speaker 2** [00:07:59] Well, so say more.

**Speaker 1** [00:08:01] Just look around, everything is not connected. Everything is eventually interconnected. You could maybe get away with that one, but everything is definitely not connected and we've talked about this on a bunch of different episodes because it comes up a lot, but everything is defiantly not connected

**Speaker 2** [00:08:19] But you just said everything is not connected, but it's interconnected.

**Speaker 1** [00:08:22] Everything is eventually interconnected. You could maybe make that argument. I'm not sure we could empirically prove that to be on the shadow of a doubt. But yeah, it does appear that things are interconnected. Things are one thing leads to another. There are lots of webs of interrelationships between things, but everything is not connected to everything else. So to say everything is connected is not actually true. In fact, it is very important to understand what is not connected in a network or what is not in a system. It's incredibly important to how the system functions.

**Speaker 2** [00:09:04] Right, because that's how you get an accurate understanding of the system itself. And I think in our episode on networks, one of the things you talked about was when you're looking at networks, and I think we're talking about terrorist networks, the nodes inside of that network that are not connected are as important as the ones that are.

**Speaker 1** [00:09:25] Absolutely. In fact, we had a fantastic student, you know, who did did an analysis of the Flint water crisis. And what she found was that over time, the the indicator and the water quality that was connected, so the indicator that the professionals were looking at that was of the water quality, which at one time was connected. somehow became disconnected, unconnected, and that caused a set of things to occur that were very bad for those communities. Yes. That's an example of the importance of when we have two things that are connected, to assume that they're going to remain connected forever and ever and ever. Yeah. To assume that our indicator, the measurement of something, is always going to be connected to the thing that it once measured. and that that will never become decoupled is absolutely something we should avoid doing because during that period where it decouples, we're not gonna know. So we have to have kind of another check, a backup to sort of say, yes, these things are coupled. These things are connected because when they become unconnected, it becomes a problem. So that's an example of a whole system that really relied on this connection being true. And when that connection was broken at some point during the passing of years, all hell broke loose.

**Speaker 2** [00:10:58] we should constantly checking our assumptions about where things are and are not connected and validating that over time things haven't changed like in that example of Flint water crisis.

**Speaker 1** [00:11:09] I mean think of it this way if if everything was connected then you would never have wi-fi problems

**Speaker 2** [00:11:17] I thought also one time you said if everything was connected, you would literally go insane because all of your neurons and synapses would be...

**Speaker 1** [00:11:25] Yeah, if every neuron in your brain was connected to every other neuron, you'd be instantly insane. Like actually. Actually. It would be.

**Speaker 2** [00:11:33] Why? Because you just couldn't separate stuff out, or?

**Speaker 1** [00:11:36] There would just be too much feedback. It would be like, I mean, imagine if you had a bunch of guitars and amps and foot pedals and every single thing was connected to every other single thing. That would be a terrible setup. You wouldn't want that.

**Speaker 2** [00:11:52] be overload.

**Speaker 1** [00:11:53] It'd be over. Overload.

**Speaker 2** [00:11:53] Stimulus overload.

**Speaker 1** [00:11:56] The way things are connected is very important and the way they're not connected is equally important. Yes. And so when we say everything is connected, we kind of lose the other of connections. The non-connections are critically important. Yes. Non-connection are opportunities sometimes, right? I think we said it in the last episode. This is known by young children everywhere when they come to their parents. And they go, well, mom hasn't talked to dad, so I think I can get away with this. Mom says, it's okay if it's OK with you, dad. And dad's like, are you sure she said that? Because it doesn't sound like she would have said that. But I guess if she said, you know, then all of a sudden the kid gets what they want. That's a kid knowing there's no, no, there's nowhere around this particular situation. There's no connection there. So I'm gonna drive a truck through that non-connection.

**Speaker 2** [00:12:52] Yeah, but when you have multiple kids eventually, like pretty soon.

**Speaker 1** [00:12:54] You do.

**Speaker 2** [00:12:55] You just, we checked, we trusted.

**Speaker 3** [00:12:58] You make a connection, exactly. Moving on.

**Speaker 2** [00:13:01] Number five.

**Speaker 3** [00:13:02] Number five.

**Speaker 2** [00:13:03] See if this is a top 10 list we'd be halfway through but it's not we'll add two sometime make it a top ten

**Speaker 1** [00:13:09] Yes, send in ones that you think are sacred cows. That'd be a good one. I'd love to find more, because I'm sure there's more. Oh, of course there are. This started with one sacred cow, and then I just collected them over the years. The last 30 years, I've collected eight of these. I feel like we should- That drives me nuts about the systems field.

**Speaker 2** [00:13:26] That's what drives you to an easy secret.

**Speaker 1** [00:13:28] I'm pretty nervous.

**Speaker 2** [00:13:31] number five, which is actually very much related to number four, which is it's all about relationships.

**Speaker 1** [00:13:39] This one is really interesting at a deep level, but at a surface and, you know, somewhat deep level. It's not all about relationships because there's many more things than just relationships. There are things and there are things relating to other things. So relationships are super important, no doubt. They're one of the four most important things, distinctions, systems, relationships, and perspectives. Um, it's not all about relationships. A lot of systems folks will come at it from it's only it's all about the relationships, the relationships are everything. Now there is some truth to this one in that all these different objects are. You know, when, when we think about, you know, any kind of object, they, they are relationships. They're made up of relationships between things. And then when we zoom into those things, those are made up relationships between things and if we keep zooming in and zooming in and zooming, what we find is just relationships to relationships to relationships, right? So in that sense, this one of the sacred cows is probably has the most air of validity. But it's only when you get down to sort of like the quantum world where everything sort of deconstructs into relationships on relationships. But at our level, at the level of humans, you know, 10 to the one, 10 of the two meters kind of

**Speaker 2** [00:15:15] Don't do the 10 to the 1 minus blah, blah, blah. It's too confusing.

**Speaker 1** [00:15:20] At our size and scale, there are things, right? We bump up against them all the time. Yeah. We bump against stuff. There's stuff in the universe.

**Speaker 2** [00:15:32] I always look at this one and I think it could be modified. So I think you're right, it has some veracity to it, but you could say it's not just about relationships. It's also about the distinctions, the systems, the perspectives, because all four of them are constantly playing off each other, interacting with each other. You can't really make a distinction without seeing the difference or the relationship between an identity and another and the part whole and all of that. So to me, it's like. It's about the relationships, but it's also about all the other stuff.

**Speaker 1** [00:16:04] which is the Jesus. It is definitely about the relationships, but it's also about the distinctions and the part-whole systems and the perspective.

**Speaker 2** [00:16:13] the D's, S's, R's, and P's. That's the opposite of the sacred cow.

**Speaker 1** [00:16:17] Well, a lot of these sacred cows, the reason why I say that they misinform is because they cause people not to look deeper at the DSRP structure of things.

**Speaker 4** [00:16:32] Oh.

**Speaker 1** [00:16:33] And so if you, if you accept these things sort of on their face blindly, then it doesn't cause you to sort of look like under the hood or look behind the curtain and be like, Oh no, actually there's there. Yeah. Relationships are really important, but Oh yeah. There's also distinctions that are being made and perspectives that are being taken and there's like grouping of various types of part hall grouping and those matter too.

**Speaker 2** [00:16:57] Interesting are you ready for number four? Yeah, the number four sacred cow of systems thinking is Systems thinking is holistic One of your favorites because I've heard you talk about him

**Speaker 1** [00:17:10] It's frustrating, one of all.

**Speaker 2** [00:17:12] So say why, why that's the most frustrating.

**Speaker 1** [00:17:15] flat out wrong and uneducated, untrue, illogical, impossible.

**Speaker 2** [00:17:23] It's also influential. I think part of it is...

**Speaker 1** [00:17:25] So influential it's ridiculous. I mean, I think if you go on if you look up systems thinking on like Wikipedia Probably in the first line, it'll say systems thinking is holistic thinking or something like that. It is just so wrong It couldn't be any wronger. I Mean it it first of all, it's impossible I mean the the best way to maybe the best to understand this or I've said this for a lot of years I'm not sure if it makes any headway with folks, but if that's true Right? So think of holistic means whole, like of the whole, which means the only thinking that is holistic is thinking that includes the entire universe. Which means the only people that are doing systems thinking in that definition are like astronomers. No one else can do it. Because if you're not thinking about the whole the whole whole, the big hole, the big corona holes. you could be criticized for not being holistic. So in every single case, no matter who you are, no matter what you're thinking about, there's someone that could think at a higher level, at a bigger hole than you, which means that person by definition would be being more holistic.

**Speaker 2** [00:18:45] Interesting

**Speaker 1** [00:18:45] which means you're sort of killing the definition of systems thinking as a viable and useful definition. It doesn't make any sense that just because you're thinking at a bigger level of scale, that means you are doing more systems thinking. What we really should be thinking is that systems thinking is thinking, different people are gonna think about different things because different things are important to different people, right? You might be thinking about your business. You might be thinking about your family. You might thinking about a plant that you're trying to grow in your garden. All of those things are systems. And systems thinking is going to think holistically and reductionistically about that thing. Yes. So you're gonna see the whole and all the interconnections, but you're also gonna zoom in to all the parts and understand those parts. And you're going to understand that each of those parts is a whole, whole world in and of itself. And you're gonna understand that the hole that you're looking about at is part of a larger whole. So systems thinking is holistic and equally reductionistic, which is the opposite of wholism. Right. So to say that systems thinking is wholishm and either imply or say directly, which we in the field say a lot, that it's anti-reductionism or not reductionism, it's just wholizm. Right. It's just It's wrong-headed, it makes no sense, and it's frankly impossible.

**Speaker 2** [00:20:20] Well, but not only that, I think this one is particularly difficult because it has led to a very fierce debate of it's one or the other.

**Speaker 5** [00:20:30] or the other.

**Speaker 2** [00:20:31] And people are so embedded in it's this or that. And what the truth is in what you're saying, systems thinking is it's both whole and part, right? Holism, reductionism. But people very fiercely go in one camp or the other, which is why you say this one is a little crazy.

**Speaker 1** [00:20:53] Yeah. I mean, it's like a butter battle. Like, like, you know, where, where the, and they're just tribal camps. We don't, it doesn't need to be an either or. Systems thinking is an and both exercise. It's an and, both, or both and exercise. It's not an either, or exercise that that statement has done more to damage the field of systems thinking and people's understanding of it than any other, without a doubt.

**Speaker 2** [00:21:19] All right, are we ready? We're moving up. We got the top three left. Oh, wow. The number three sacred cow of the systems thinking field of systems thinking. This actually is one we hear a lot too. I guess they're in order, right? The ones we hear the most. Systems thinking is system dynamics.

**Speaker 1** [00:21:37] So, and some people might not even be familiar with this one, but if you get into the field at all, you're gonna get exposed to certain things, especially if you're in the United States, you're going to get exposed to system dynamics. System dynamics is a very powerful framework for doing some types of systems thinking, not all systems thinking but some types in some situations. Very powerful. It was created by Forrester at MIT. Very powerful stuff for certain types of system. But the mistake here is that systems thinking is system dynamics, and that's just not the case. There are many, many forms of systems thinking that don't aspire to be or fit into the system dynamics framework. There's many systems that aren't terribly benefited by utilizing a system dynamics framework. And there's some systems. that are perfect for a system's dynamic, a system dynamic. Right, like population models. Population models, all kinds of stuff like that. Stocks, anything where you have stock too close.

**Speaker 2** [00:22:41] And it's really good for those things.

**Speaker 1** [00:22:42] Very good, yeah, very powerful. If you look across the entire systems landscape, there's a lot of systems frameworks that have no scientific validity that people talk about, that haven't garnered very much evidence over the years. And some of them have had plenty of time to garner evidence, and they haven't. But system dynamics is one of the few in the world that has some empirical evidence behind it. it's gotten almost, it's made like synonymous with, with systems thinking sometimes and it's not.

**Speaker 2** [00:23:18] I'm wondering if it would be helpful just in this one moment to clarify, there's systems thinking and then there's system's methods or system's thinking methods or methodologies. Because I think if you think about it, SSM, CST, system dynamics, those are more methods where systems thinking undercuts those methods in many ways.

**Speaker 1** [00:23:44] Yeah, it gets even more complex than that. I mean, there are systems sciences, there are different systems sciences and systems thinking is what's driving the thought. The systems thinking is essentially a cognitive and physical science. So what we're trying to figure out is how do we think in ways that are more in alignment with systems in the real world? And so systems thinking is just the study of how do we do that better? Yes. How do we get it right more often? How do have less bias? How do make mental models that are more accurate to the kind of complexity that we see around us? Yes. Then within systems thinking, there are frameworks, frankly, are just people's opinions that don't have a lot of evidence. If you're a consumer of systems thinking, you should care about that. This episode is sponsored by Training Camp, the ultimate online spot for building the mental fitness that drives personal and professional change and success. At Training Camp you'll have access to the science and practice of thinking with personalized thinking assessments, tiered training, and best of all, practice that improves skill. Go to CabreraLab.org to learn more. And now... Back to the episode.

**Speaker 2** [00:25:10] So let's clarify that for a minute, because I think that could be misunderstood what you just said. What I'm thinking about is there are frameworks like system dynamics. Some of those frameworks are empirically validated and some are not.

**Speaker 1** [00:25:25] Most are not.

**Speaker 2** [00:25:25] There are frameworks that are very useful for particular contexts or situations, however you would say it.

**Speaker 1** [00:25:35] Some people would say that they're useful, yes. Yes. We don't know whether they're useful because there's no empirical research that says they're useful. There's just people that are saying they're useful.

**Speaker 2** [00:25:47] Let's put it differently. There are people who are using them in particular context and finding them useful, but have not validated their utility. So there are a lot of people who are, for example, proponents of soft systems methodology. They use it. It's very useful. But they don't do the empirical validation and research on it. Is that a fair statement?

**Speaker 1** [00:26:09] It's very useful according to them.

**Speaker 2** [00:26:12] That's why I just said they found it useful.

**Speaker 1** [00:26:14] For example, if the goal of baseball is to win and somebody says, well, I think this batting method is the best batting method that ever was, but there's no evidence that that batting method increases your batting average or wins you games or anything, then that's just somebody's opinion. And somebody can have that opinion. They have every right to have that opinion, but it's not valid. It's not a validated opinion.

**Speaker 2** [00:26:47] It's not valid, that's what I mean, but they found it useful.

**Speaker 1** [00:26:50] they think that it's useful.

**Speaker 2** [00:26:52] they got a result that they thought they wanted to get.

**Speaker 1** [00:26:55] Or they just think it's useful. Well, there's a difference between thinking something's useful and getting a result.

**Speaker 2** [00:27:02] That's true. That's very true.

**Speaker 1** [00:27:03] Because if you have results and you can validate those results, then it's a validated model, at least. Even if you did it one time, there's some validation.

**Speaker 2** [00:27:14] That makes sense.

**Speaker 1** [00:27:15] Think of systems thinking like this. Think of it like the supplement industry.

**Speaker 2** [00:27:21] Like vitamin supplements? Yeah.

**Speaker 1** [00:27:22] There is no doubt that supplements are, you know, potentially good for you. The crux of it is figuring out which ones work, because there's a lot of people out there with a lot opinions about which supplements you should be taking.

**Speaker 2** [00:27:39] and not a lot of evidence.

**Speaker 1** [00:27:40] and not a lot of evidence.

**Speaker 2** [00:27:41] They have anecdotal evidence.

**Speaker 1** [00:27:42] They have an anecdotal level.

**Speaker 2** [00:27:43] but they don't have evidence. I'm very suspect of the whole.

**Speaker 1** [00:27:46] Exactly. It's very difficult to decipher what is good for you and what is not, and even what is good for your versus what is just kind of a placebo-y nothing. Look for validation, look for evidence of these frameworks, whether or not they exist.

**Speaker 2** [00:28:10] I think it's a fair point.

**Speaker 1** [00:28:11] Because there's a lot of frameworks in the world, not just systems thinking frameworks, but frameworks in general. There's a lotta frameworks in world that are popular. And just because a framework is popular doesn't mean that it's effective. It just means that it is popular. Just like the Kardashians, right? the Kardashians are popular, you know, who knows whether they're They're terrible for society. Useful, are they doing good in the world? Are they, you know, I don't know, but they're popular. There's no doubt there's, they're, they are popular.

**Speaker 2** [00:28:42] Yes, popular but not always tested is what you're saying.

**Speaker 1** [00:28:45] Yeah, just because something's popular doesn't mean that it's promising or, you know, just because something is popular certainly doesn't means that it is validated. That it's valid. It doesn't make it true in a sense, right? So what you want to know is not just that it popular, mostly you want know whether it's a valid, right, and whether or not it's popular is sort of irrelevant. whether or not it's valid is what's relevant.

**Speaker 2** [00:29:11] Are you ready? Got two left. The number two.

**Speaker 1** [00:29:14] Number two.

**Speaker 2** [00:29:15] sacred cow is all systems have a purpose. Oh, geez. Now, we should be careful. And this one's a little funny when you explain it, because we've had conversations with this about this. And it's a little funny.

**Speaker 1** [00:29:29] Yeah, it's a little heady there. In fact, Stafford Beer came up with a notion called POSUID, which is an acronym, P-O-S-I-W-I.D., for the purpose of a system is what it does. Right. What I would say is that we should be very careful when we say systems have or do not have a purpose. What we should think about is what is the system doing and that is its purpose. because we can get very we can get very lost in the aspirational purpose of an organization or the aspiritional purpose of a system like education or a system like Congress or any system, the economic system or the electrical system. So whatever system you're dealing with, what you should do is not sort of put human bias on that system of what our aspirational purpose of that system is. So any of us that look at the education system, for example, would have an aspirational purpose for that system, which is to raise our children in the most amazing way possible, to prepare them for future readiness in life and in all of its dimensions. but that's putting kind of an aspirational bias on that system. What we should do is look at the system and say, what is the system doing at the systems level? What is its behavior? Right. And whatever that behavior is, is its purpose.

**Speaker 2** [00:31:06] When we talk about it, even it starts to seem or feel a little bit circular. So there's a difference in what's coming out of what we're saying. So all systems have a purpose. Contrast that to a purpose of a system is what it does. So what's false about all systems, have a purpose. We are assuming there's some aspirational purpose to the system and ignoring the actual outcome of that system, which is its purpose, according to Possewood.

**Speaker 1** [00:31:35] According to the system. Yes. Right. Think about it this way. If I have a rowboat in the middle of the lake and I got one, two guys in it. Right? And one guy's paddling to the eastern shore and one guy is paddling to the western shore. What is the purpose of that system?

**Speaker 2** [00:31:56] to get to the other side.

**Speaker 1** [00:31:57] No, the purpose of that system is to stay in the middle of the lake. Now, if you ask that guy, what is your purpose, he would say to get to the western shore. And if you asked the other guy, what's your purpose? It's to get the eastern shore. And if he said, what is the purpose of this boat, they would say they would both say eastern western. Yes, because they're taking an aspiration, a human aspiration on the system. but the system is made up of all of the different parts and interactions and dynamics and perspectives. And that system wants to stay in the center of the lake. Right, because that's what it's doing. Because that's, what it is doing. So when you know that about your system, you can resolve certain things about it. Like if you said, well, geez, we can't allow this system to sit in the Center of the Lake, otherwise these two guys are gonna die, right? We can now do something about it. Once we admit to ourselves that this system is not listening to our aspirational purposes. Yes. It's listening to the dynamical purposes. Yes. The integration of purposes. Yeah. And so POSSWOOD gives us that understanding. Realizing that a system doesn't have a purpose or the purpose of a system is what it does. Helps us realize that so that we don't make this this fundamental bias or fundamental human mistake of thinking that what we think the system is for is the purpose of the system.

**Speaker 2** [00:33:25] I think that's the

**Speaker 1** [00:33:25] Because the guy in the boat thinks that the purpose of the system is to get to the shore he's going to.

**Speaker 2** [00:33:30] So the idea is look at the outcomes of the system. That's its purpose. You're seeing it as it is, which means you can intervene, change it directly because you're actually seeing the reality of it and what it's doing.

**Speaker 1** [00:33:44] Another way of thinking about it, if you're like an organizational leader, I'll sometimes talk about the big beach ball.

**Speaker 2** [00:33:50] Yes, the transparent.

**Speaker 1** [00:33:51] If you have this huge transparent beach ball on the beach and you're up on the cliff and you are looking at and this is your organization and it's a transparent beachball. It's huge. It's the size of a building. Yeah. And it's got all these people in it. And some people are pushing left, pushing left down the beach. And there's like a lemonade stand down there. Maybe presumably they're heading to get lemonade on a hot day.

**Speaker 2** [00:34:15] Well, they might be hot in that beach ball.

**Speaker 1** [00:34:16] Yeah, exactly, because it's sweaty inside. And then some people, three people are over here pushing to the right down the beach. You have five people pushing to the left. You got two people in the middle playing chess. And there's another guy over there sleeping. So you have three people and five people, that's eight, nine, 10, 11 people. Yeah. Let's take the guy that's sleeping out. So 10 people. 10 people, right? So you got 10 people in this beach ball. Now what's the purpose of that beach ball? What's the beach ball gonna do, first of all?

**Speaker 2** [00:34:50] It's going to move around very strangely randomly and not go very far in any direction.

**Speaker 1** [00:34:54] Well, it's going to move a little left.

**Speaker 2** [00:34:56] That way.

**Speaker 1** [00:34:57] It's going to move. So it's lean, not a lot, but it's going to move a little left.

**Speaker 2** [00:35:01] incrementally.

**Speaker 1** [00:35:02] incrementally left a little bit. Now if these two people in the middle are convinced by these three people that they want to go down right and get ice cream, now what's it going to do?

**Speaker 2** [00:35:11] Nothing is going to stop.

**Speaker 1** [00:35:12] Let's stay still, right? So the purpose of this system is dependent on the dynamics of what's happening in the system. And that system could be your organization, it could be a country, it could your plant, it could whatever. What you wanna understand is what is the purpose of the system, not what is purpose of the individual people. Because if you talk to these five guys over here, they want ice cream, they want lemonade, right. So their purpose is clear, but they're not the system The system is all the people and the beach ball and all the things that are going on in the chess set and all the things are going in between and them talking to each other and trying to convince each other to help them do whatever for whatever reasons. So the purpose of the system isn't the same as the purpose of the people, right? It's the collective dynamics of all those purposes. Yeah, and in some cases, non-purposes that lead to what the system does.

**Speaker 2** [00:36:09] which is its purpose.

**Speaker 1** [00:36:11] which is it creeps slowly to the left.

**Speaker 2** [00:36:14] All right, are you ready? Yes. Should we drum roll it? Let's drum roll. You're better at drumming than me. Number one, sacred cow is, the whole is more than the sum of its parts.

**Speaker 1** [00:36:26] This one you really, I literally could teach a year long class on this one, so we'll have to keep it short. But the whole is always exactly equal to its parts. Now a lot of people are going to say that's not the case. And that's because we've done a little, I call it a shell game, you know, on the streets, like we used to go in Columbia, they play this little shell game on the streets right there. move the thing around. So what we've done is we've created a shell game where we say the whole is made up of parts and relationships. Relationships are part of the whole, but they're not parts of the hole. That doesn't really make any sense, right? Yeah. But if we subtract the relationships out of the hall. So if we take this whole here, Yep. Have a safe day. You know. The whole has parts and the whole has relationships. But if we take the relationships away for a second, then the whole is greater than the parts. Of course the whole was greater than parts. made this little shell game where you say the relationships while being part of the whole, which nobody argues with, are not parts of the whole. Right. Well, that is kind of a game.

**Speaker 2** [00:37:56] Yeah, it's a strange game.

**Speaker 1** [00:37:58] It's a very strange case. It's not fair. So if you take the parts, which includes the relational parts, yes, then the whole is exactly equal to the parts always because the whole is the parts the collective of parts including the relationships between the parts. Yes. Mathematicians will use a term where they say the whole is greater than the sum of the parts And in that particular case, their mathematicians are using the term sum to mean additive. Meaning if you simply add the parts together, including the relational parts, the whole will be greater than the simple sum of those things. Because there's so many. Because there are so many dynamical products and things like that occurring. So mathematicians using the word sum very technically there. But in the general public, we take that as the collection. But that's not what mathematicians mean. They mean some, like additive. Yes. So when a mathematician says the whole is greater than the sum of its parts, they're being quite literal about the sum. I understand. So they're not saying that the whole is greater then its parts. Right? Yeah. They're saying that whole is greater than simple sum of it's parts. That's a very different statement than the whole is greater than the parts. Now, people say this all the time, the whole was greater than parts, the whole greater than part, emergence is brought up. Emergence is just the emergent outcome. There's nothing magical about it, and that emergence in complex adapter systems is based on the collective dynamics, which are the relationships. So, yes, Emergence does stuff. very differently than any of the parts do things. You can have a colony of ants that literally operates as an intelligent thing, but we won't be able to find that level of intelligence in any one of the individual ants. So we say to ourselves, that's an emergent property. It's a surprising property of the system that is not contained in any of parts. Yes. But what we fail to see is that that intelligence is actually contained in the relationships.

**Speaker 2** [00:40:20] between and among all the parts.

**Speaker 1** [00:40:21] between and among those ants. So yes, it's true. No individual ant has the intelligence of the colony, which can go out and grab food at certain distances or do all kinds of intelligent things. No individual has that intelligence. So where is that intelligence coming from? Well, it is coming from the interaction effects of all the ants, from the rules that they follow. Yes. Pheromone trails and all kinds different rules that are following, right? Yep. So That intelligence is in the system. It's in the parts of the system, not in the ant parts, but in the relational parts of system. So it's not a mystery, it's no magic. There's nothing mysterious going on. It's just that those particular rules applied by those particular ants lead to this kind of intelligence. Right. And this whole is every bit equal to that.

**Speaker 2** [00:41:15] Yes, and when we started this exercise, we were talking about misinformation. And I think in particular, since this is number one on the list, it would be interesting to hear, what are the consequences of believing this whole is greater than the sum of its parts?

**Speaker 1** [00:41:35] I think the biggest consequences that it allows for this, like this magical mystery, almost mythical explanations to, to sneak in the beauty of these systems. The absolute beauty of the systems is understanding how such simple things arise into such complexity. It's remarkable that these very, very simple things arise. into the emergent phenomena of complexity, things like intelligence. Things, unexpected things. Unexpected, yes. Mysterious, no. Not mysterious. Unexpected, surprising, remarkable, beautiful, elegant, yes, but mysterious, mythical, magical, no, no In fact, you can see it right in the rules. And the rules are amazing. The rules that govern these systems are amazing if we settle for, oh yeah, it's just the whole is greater than the parts. I don't know why. Then you never get to experience the remarkable just beauty and elegance that nature has in evolving these rules, like never cross a pheromone trail, which sounds like a completely ridiculous rule that has no standing in any kind of you know, remarkable nature to it. And yet it's the one that leads to this incredible intelligence we see. Right. If you multiply it times a thousand or a million. Yeah. Right, so it's that multiplying effect of all that rule, all these little ants relating around that rule. And every time they relate, those are the collective dynamics, the relationships that are happening in the network. And all those relationships and all those parts together lead to the emergent property. and the whole is exactly equal. So if we know that the whole is exactly equally, if it's turning out not to be equal, then we know we're missing something.

**Speaker 2** [00:43:39] See, that's where I think you should pause, because that means if you believe this, then you're gonna miss a large part of the system. It's dynamics, you're going to miss a lot. And that's why I think it's important that we think about these sacred cows.

**Speaker 1** [00:43:58] Yeah, it's like the conservation of energy law. It's like if you think that energy can just kind of disappear, then then you'll accept all kinds of crazy hypotheses. But if you if you just go, no, no. It's around here somewhere. Let's keep looking. Yeah. Right. Then, you know, you're going to find it. That's right. So I think I think a lot of these sacred cows, what they do is they allow us to be somewhat lazy in our understanding of systems. and they allow us to sort of stop before we see the remarkable nature of systems.

**Speaker 2** [00:44:31] Yes, and I mean, I would think of them as, I mean we've talked about this before when we talk about organizations, these sticky mental models. And they're sort of old, and they're popular, and they are traditional. And people buy into them, and people take them on face value because they've been around so long, and there's all these great debates about them. But I guess the real thought is, well, how do you undo that? How do you get rid of those sort of sticky, wrong mental models?

**Speaker 1** [00:45:01] Well, first, you call them out. That's why I kind of came up with the sacred cows idea, was to call it out. And sometimes you got to face all the backlash of calling it out and calling bullshit on these things, basically, which is what the sacred cow shit, calling cow shit on these. So I think, first you call it out, explain why, and then be ready for the barrage of hand-waving that people will have. But, um... Third, I think, just understand why, why it's so important. I mean, things change when thinking changes. Things change when think changes. Nothing is going to change the way that it is until the thinking changes, and if we go back to those guys on the lake, in the canoe, like they're just gonna keep paddling and they're gonna wonder, like in a real world, in the cano example, it's kind of easy to see and understand and you might turn around and be like, Dude, what are you doing? Why are you going? But in a much more complex environment, you're like, why am I not getting anywhere? It must be the wind or the currents or whatever. And you don't look around and look beneath at what is the system doing. So if we create magical explanations with the hole is greater than the sum of the greater than the parts. If we create Magical explanations with it's all about context. Yeah. If we create sweeping generalities, like it's about the relationships. Yeah. If we do those kinds of things, what we're doing is we're staying in the stuck. We're staying stuck. Yeah. We're not seeing the system. And if we don't see the system, we can't change the system Right. Things can change. Even the most dastardly systems, the ones that are really. entrenched and difficult in society can change if our thinking changes. But if our thinking doesn't change, then those systems will stay the same. And if you understand that, not just at the outside world innovator, like you've got this one person who's an innovator to the system, if you understood how complex adaptive systems, the kinds that are around us, the systems that are entrenched. the change of thinking has to happen at all those little agents that are in that ball. It can't just be one outside innovator yelling at them saying, you guys need to change your thing. It has to be that they all sort of realize all at once. They all sort come to the realization of, oh, we're in a big beach ball.

**Speaker 2** [00:47:44] He should probably get.

**Speaker 1** [00:47:45] And we can keep doing this shit for the rest of our lives or we could go get lemonade and then go get ice cream. We could do both. Or we could sweat our asses off in this plastic beach ball for the last of our life. Die. Yeah. Does that make sense? So I think what these do is that, is they just help us look a little deeper, be a little bit more curious. and stop sweating our asses off.

**Speaker 2** [00:48:16] That's the eight sacred cows. Now, your job is to listen to this and then decide which one's meaty and interesting and you want to hear more of.

**Speaker 3** [00:48:24] think that's a wrap oh wait we're back what are you wearing

**Speaker 2** [00:48:33] What do you mean? What am I wearing? That's my special holiday crown.

**Speaker 3** [00:48:37] holiday crown

**Speaker 2** [00:48:39] It's time to be festive, it's time to start thinking about celebrating the end of the year. Nice. And the holidays. And so I've dressed for it, as always. I do this for everyone.

**Speaker 3** [00:48:50] I love it.

**Speaker 2** [00:48:51] You know what it means.

**Speaker 3** [00:48:52] What does it mean?

**Speaker 2** [00:48:54] We really need to thank, from the bottom of our hearts, all of the people who have been listening and commenting to the podcast. So we have a gift for them. We want to give them the gift of thinking.

**Speaker 3** [00:49:12] The gift of think-

**Speaker 2** [00:49:13] which means there will be a special QR code and a discount code available to podcast viewers only, which gives them a significant discount off of the Blue Belt course, which is a big course.

**Speaker 3** [00:49:26] Yeah, that is a bit de-

**Speaker 2** [00:49:27] So they're going to save a lot of money.

**Speaker 3** [00:49:30] And that's a great course that really, you'll develop really top-notch skills in that course. So they can give it as a gift to anybody.

**Speaker 2** [00:49:42] You can share the discount code, share the QR code. We wanna spread the love of faking.

**Speaker 4** [00:49:56] Bye!