

EPISODE 84

[INTRODUCTION]

[0:00:06] ANNOUNCER: You are listening to 10,000 Swamp Leaders. Leadership conversations that explore adapting and thriving in a complex world with Rick Torseth and guests.

[INTERVIEW]

[0:00:20] RT: Hi, everybody. Rick Torseth here. Back for another episode of 10,000 Swamp Leaders. This is a conversation that we have on an ongoing basis with people who've made some decisions how to use themselves to lead in a complex and, in some cases, crazy world. Today is a return of a prior guest of mine, Dave Cooper, who was on episode 17. Dave, that's a couple of years ago now, man. And Dave is back because he posted an article that we're going to talk about in some detail today on Substack that got me thinking about complex adaptive systems and his knowledge of it in a specific and real context that we're all experiencing right now, and that is the situation in Iran. I'm going to let Dave get in here. Dave, welcome back to the podcast.

[0:01:03] DC: Thank you for having me. Always a pleasure.

[0:01:06] RT: Okay. So, let's give people a frame of reference about who you are and how that aligns with the point of views and the things you've written about in the Substack article. So, you have a multifaceted background here that makes you quite credible in this conversation. So, would you give people that sort of historical understanding before we get rolling?

[0:01:25] DC: Yeah, sure. One, I'm a Virgo.

[0:01:28] RT: I'm a Virgo, too. I didn't know that, man.

[0:01:32] DC: And I'm the last of the baby boomers. So, 1964. I'm a Virgo boomer. That's all you need to know, right? Just kidding. I was a Navy SEAL for 25 years. 19 of those years was

served at this place that we call the Naval Special Warfare Development Group. It's one of the what we call tier one assault units in the United States. You would remember us perhaps as the guys that brought you along with our CIA friends, Osama bin Laden. So, 25 years doing that.

But I was a budding scientist, a molecular biologist before I ever stepped into that role. I was also an athlete. I read all my roommates' philosophy books. And I had, back in the 1980s, this inkling that there was some place in the world where I could bait these two realms. The athletic world, I was a wrestler in college, and the academic world. And no idea what that would look like.

And I heard about the SEAL teams in an elective. I took the history of the Vietnam War in the 1980s. That was still raw in the American psyche. I had never heard of it. And make the long story short, I said this is what I'm going to do after graduation just for a couple years. And I ended up making it into the SEAL teams. And then a couple years turned into 25 years. So my math has never been that great, I guess.

But afterwards, I bummed around, if you will, a little bit. I always knew I wanted to get back to the sciences. I never really left the sciences. Most of what I read, apart from fiction, was also science related articles and books. And I didn't find out about complexity. I found out that there was a place that was dabbling into it. We both went to that program at Oxford and HEC Paris for grad school. And after those two years, I still couldn't get enough of it. I wanted to get back into the hard stuff.

And then ended up originally pursuing a PhD at Arizona State University and some of the metrics changed. Anyway, it was another three and a half years spent in that program. I left with a master's degree in complex system science. So, two master's degrees later. I'm a guy that takes complex system science into the world of human beings. Take it out of the lab, put it in organizations primarily to help organizations learn to change, grow, adapt, if you will. But growth has always been a big part of that calculus. And I often take a lot of fancy models and mathematics into organizations, gather the data, and we can chart different pathways through a complex, unpredictable future.

[0:04:08] RT: Well, we're going to talk about complex adaptive system here called the United States Federal Government here in just a couple seconds. So, let's see how we do. What provoked our conversation or my pinging to you about could we jump on another podcast is you published a paper or the piece you wrote on Substack last week. The map that wasn't. The mechanistic doctrine entered an adaptive world and what it could not see.

If you don't mind, I want to just use a quote here. I extract out from what you wrote here. The doctrine guiding how the United States plans and executes adaptive wars is fundamentally unable to see what matters most about them. And the consequences of that failure are now visible in real time across nine countries in the closed Strait of Hormuz.

All right. With your military background, your SEAL background, February 28th, the United States opens up this door into Iran and away we go. What were you seeing that provoked you a few days later to sit down and write this paper? What was going on based on your systems thinking, your complex adaptive thinking, your SEAL team experience? What was going on that caused you to say, "I got to write about this?"

[0:05:19] DC: That's a great question to start with. Probably what was going on was I kept seeing the rationale. There were some desired end states, regime change, take out the nukes, etc., etc., and the rationale for conducting essentially what is a war to make that happen. And whenever I see that, it instantly triggers this is not as easy as it seems. And your interventions inside of a system, particularly inside of a network that has been designed over the last 50 years as the Iranian government has designed it, those interventions, no matter how harsh, will cause your desired effects

And a lot of people start there. I have these desired end states, and I'm going to plan towards those desired end states. Never considering that the system you're intervening in is going to adapt. It's not going to collapse for the most part. It's mano a mano in a World War II type scenario. Well then, perhaps. But those wars are increasingly rare. The last time we saw that was the first Gulf War.

Yeah, it was really the rationale that triggered this in me. Also, a book is coming out, hopefully, early to mid next year. And I needed to take the concepts in the book and start getting them out

there so that people could become accustomed to some of these things. Not necessarily in a scientific sense, but in a story sense. People remember the stories, not all the fancy concepts. So, all those things are kind of floating around. And this is serious stuff. People are losing their lives. It's worth writing about.

And if you read the article, it's not in a political sense. While I don't pull punches, I'm also not out there to judge people that misses the point. Right? It's to really just give an idea of how you might look at a system like Iran and ask questions, pertinent questions, before you act rather than after the consequences have occurred. All those things kind of floating around led to the article.

[0:07:24] RT: You said something that is a question I had written down here that I want to ask, but let's just go with it right now. One of the things that jumped out at me when I read the piece was how sophisticated whoever the body of authority is in Iran to actually be thinking in the terms that you described about complex adaptive systems versus linear mechanistic systems. How do you account for that? I mean, those of us living here in this part of the world, we'd think we'd be one step, two steps, three steps ahead of those places, but that's not the case here right now based on what I read in the paper you wrote.

[0:07:57] DC: There's different ways to account for that. One is if you're Iran considering some kind of conflict in the future with a superpower and to be – the writing is on the wall. You're not going to defeat the United States military. But do you have to? And this has been an ongoing pattern that people all over the world have seen, at least about the United States, since the Vietnam War. You don't need to win an outright war against the United States. All you have to do is survive.

And what does that look like? And for Iran, it was setting up these proxy networks that operate on standing orders. There's no orders coming from the supreme leader. They don't wait for orders. They simply act. And those networks are distributed across the Gulf region. Their succession plan doesn't require elections or anything like ours. Right? After Khamenei is killed, the next guy is named. After Bin Laden is killed, or after he's sidelined, really, from 2001 on, somebody else is named. And these people begin acting in a space without orders, and that makes them extremely difficult to eradicate.

You don't cause a collapse of those networks. This isn't new science. It's well known. All those networks have to do is survive. And that's what Iran is doing right now. And if they do that effectively, it would likely, I say likely, world is probabilities, not predictions, but they would likely succeed. And, strategically, they would win just as the North Vietnam won, just as the Taliban won in Afghanistan, etc., etc., etc.

[0:09:41] RT: Okay. So you have a line in here that says the strategic calculus such as it was relied on – and you're talking about the US strategic calculus here. I should say that. The strategic calculus such as it was relied on a set of assumptions that boiled down to this. Iran is a complicated problem that had reached a manageable moment. I had to read that thing three times because it seems so off to me. Meaning they can't harmonize together. And I know that's your intention in writing it.

I infer that you're saying that the powers that be in the US government see this situation as a tactical, manageable problem that they can deploy some resources, fix it, be done with it, and move on. And I'm oversimplifying here to a degree. But what's your intention here? What are you observing, and what are you speaking to that gives the reader concern?

[0:10:28] DC: Well, this aligns well with your adaptive leadership world. And it's a great insight to come out of the adaptive leadership world and the complex systems world as well. Here's a convergence. There are technical problems that can be solved with existing knowledge. And there are complex problems that there are no solutions for.

If there were solutions for poverty, we would have discovered those long ago. If there were solutions for crime, technical solutions for crime, we would have discovered those long ago. It just doesn't work that way. There are so many dynamics at work that keep the environment shifting that you continuously have to diagnose the system and improvise. That's what complexity requires. You are generating new knowledge in the moment that allows you to steer that system or, in this case, that opponent towards end states that might not be desirable. You can't define them. Because what happens can't be predicted. But you can steer them towards better paths as opposed to worse paths.

And people don't like that, right? It's not how the brain works. We like simple things. Here's A, and it causes B. And that's how the world is. And the United States military has for a long time – this is human nature, not just the United States military. We like to blanket any problem with a set of technical solutions that worked in the past. And it doesn't work in a complex world.

And that's why I said that strategic calculus boils down to Iran's a complicated problem and it's arrived at this manageable moment. And if we strike it, the disruption will cause the regime to collapse. And in its place, something else takes root. And sometimes that happens, but the something else is never what you predicted or likely to be what you predicted, and it could be far worse.

[0:12:15] RT: Yeah. You say here that the plan couldn't anticipate the system had entered because the system wasn't a machine. It was alive and it had already adapted before the first tomahawk left the tube. And it strikes me that if that's accurate, obviously it is, we were behind the curve before we ever started this deal.

[0:12:33] DC: Yeah. So the old adage is that we tend to fight the last war. And Venezuela for the United States was a success story, right? It amounted to a technical problem. It becomes complex when people start interacting. And dropping bombs is a form of interaction but not a two-way form of interaction. So if you would have put people on the ground in Venezuela, more than just the special operations forces that were there, the situation would have turned out dramatically differently as we see in Vietnam, Afghanistan, Iraq, and other places. Somalia and Yemen where we've been involved where things haven't worked out in our favor.

Yeah, that system is going to adapt. If a virus enters your body, your body doesn't collapse, unless it's something extreme. For some people, COVID, it wasn't that the body collapsed. It's that people overreacted to the virus. That's what killed them, the inflammation. And complex systems adapt. That's what they do. They don't collapse.

[0:13:33] RT: Okay. So, let's give people a brief primer here because not everybody's well-versed in what constitutes a complex adaptive system. I know you can go on for a long time about complex adaptive systems.

[0:13:43] DC: I won't.

[0:13:44] RT: But assume that you're talking to my grandmother.

[0:13:47] DC: Yeah.

[0:13:47] RT: Or somebody else. What constitutes a complex adaptive system? Let's start with that.

[0:13:53] DC: The simplest definition I can give you is a diverse group of actors. Those actors could be protein molecules, they could be cells, they could be people, they could be planets, etc., etc., etc. Diverse group of actors all interconnected and interdependent. Here's the network, right? We tend to see things as an org chart. That's just simply not how the world works. The org chart shows authority relationships. Networks are where real life happens.

So, a diverse group of actors, all interconnected, all interdependent. The interdependency there is what one does can have impacts way down the chain that you can't necessarily predict. You think of a spiderweb. A fly lands somewhere in the web. It sends these little perturbations throughout the web and the spider senses those and moves to wherever the fly is. That's interdependence.

All of those actors have the ability to process information. And all of those actors have the ability to change or adapt. Right? When we say complex adaptive systems, it's actually a misnomer. Right? All systems are complex. All systems have the ability to change and adapt. Some are better at it than others. You are a complex system. You have a diverse group of cells, 36 trillion or so at work in your body. You also have an equal number or perhaps a lot more of cells that aren't even human in your body that you need to survive. You are any number of systems. We think of the central nervous system, the musculoskeletal system. All those systems working together. Interoperability. It's a nice word. Producing this thing that we call you.

When you come together with others, that could be a family, it could be a team, it could be a community, it could be a country. Right? All of those are examples of complex systems or complex adaptive systems. Grandma is a complex system, whether she realizes it or not.

[0:15:47] RT: Point taken. We're going to come back to this, I think, I know near the end. Because what we also want to do is give people some pathways and some options to begin to understand on their own complex adaptive systems, because it's a reality, as you just laid out.

But let's jump backwards a little bit to where we were. Because you have in the paper, you basically say that this whole event was about one thing, and that is the Strait of Hormuz. And that, for a while and maybe still, we didn't see that. We didn't get that. You're right here that the Strait of Hormuz is decisive terrain. And you have a very distinct understanding or definition of what decisive terrain is. Can you share that with people?

[0:16:32] DC: Yeah, it's a great question. Anybody who's listening who studies, or had to study, or utilize small unit tactics understands the difference between key terrain, which is terrain that is favorable. We often in the common everyday language, we say take the high ground. Well, the high ground could be key terrain. It might not be. It might be something else.

But decisive terrain is really rare, and it doesn't just aid you in achieving your goals. It is a necessity. It must be held in order for those goals to be achieved. As I said, it's really rare. If you think about Israel, the decisive terrain in Israel would be the Golan Heights. Why? Because the Golan Heights controls Israel's water supply. You control the water supply, you control Israel. So, Israel must hold on to the Golan Heights. While the Straits of Hormuz, where a fifth of the world's oil supply flows through there daily. It is decisive terrain. You must hold it in order to have an outright victory in this conflict.

And either we didn't realize that, we overlooked it. Some out there say it doesn't matter. We don't need to worry about that. That is foolish. But it's understandable if you're not steeped in these kinds of tactics. But yes, the straits are decisive terrain, and we don't hold it. Iran does.

[0:17:53] RT: Right? That line is key, I think. I'm thinking of this right now. Let's just step away from Iran for the moment and using this decisive terrain. What are some examples of decisive terrain in a person's life or in their work area? Meaning we're not as dramatic and at risk and exposed and dying in the job like the things in Iran. But there must be decisive terrain in

everybody's lives in different structures and phases of their life. What comes to mind for you in decisive terrain personally?

[0:18:21] DC: I've never really put it in terms of an individual human. But what must you hold in order to be successful? What, in this case, metaphorical terrain must you hold in order to be successful? And I would tell you then that context matters. Context always matters. But in this case, context is both king and queen.

That decisive terrain could be an ideology. We are humans that value belonging. And if you were to divest yourself of your adaptive leadership ideology, although it's not so strong as to be ideology, but if you were to give that up, you are no longer in a place where you have this. You're in some liminal space where you're no longer identified. Humans, none of us likes that. So it depends, right?

But, for me, I would say the decisive terrain is anything that allows us to become more resilient. Your everyday practices. How you take care of yourself? How you relate to other people? How you care for other people? Those are all aspects of resilience in human systems. And those are things that we need to hang on to. We need to hang on to our routines that get us moving. We need to hang on to diets that are full of nutrient-rich foods, not full of processed foods. We need to hang on to our sleep routines. All of these things like that. And of course, we need to hang on to our valuable relationships. I separate you from those relationships. Your brain will experience it in the same way it experiences physical torture. All of those would constitute decisive terrain in a person's life.

[0:20:05] RT: Fair to say that if I'm listening this podcast and I decide I want to get a better grip on complex adaptive systems. And they're going to put resources in the show notes. And I'll chase after those resources, and I'll check that out. One of the ways in which I might begin to build my capacity is to understand what my decisive terrain is in my own personal life. I mean that would be a useful element to have in hand as I was trying to actually add additional capacity around understanding complex systems.

[0:20:31] DC: Yeah. Your friend network. That's a great way to understand complex systems is simply map your friend network. And you can do it with just your close friends, right? And,

hopefully, people have close friends because that's necessary for resilience as well. That's decisive terrain. But yeah, sit down and map that close friend network and then perturb it. Say something in that network and see what happens, right? Because that's what networks do is they metabolize things and watch what the outcome is.

You could even predict, I'm going to say, that to my Republican friends today, I'm no longer part of the Republican party, and see what they say to me. Or I'm going to say to my Democratic friends, I'm no longer part of your Democratic party, and see what happens. Maybe don't go that extreme because. When you come back and say, "I'm just kidding," it might be too late.

But those are ways to do it simply to get a real sense of how networks work is to consider your own network and then consider ways that you might perturb it. Humor might be a better way. See how a joke lands with everybody in that network and what the common consensus is. The output of that network gives you a sense that, "Hey, I didn't expect this to happen." And that gives you an idea of what complex systems do. They respond in ways that are really difficult to predict.

[0:21:49] RT: It sounds to me the way I hear what you're saying here is it'd be useful for me in my life to every once in a while agitate a little bit my decisive terrain. Because I can get lackadaisical and take things for granted. Just kind of coast through certain parts of life that they're fragile. They need to be tended to. They need to be paid attention to. And so being mindful of that distinction that you're making, I think, at least for me, is a way to actually be purposeful about engaging that in a more robust way.

[0:22:19] DC: Now you bring in the concept of attractors, right, from complex systems. You think of attractors like a whirlpool, a gravitational well. These are points in our lives that we evolve toward. And once we get there, like a whirlpool, like a molecule of water is held in that whirlpool. Cultures are attractors. Daily routines, again, are attractors. Most of them take no thought. If a disruption comes along, you might change things for a couple days. But when the disruption passes, you fall back into that gravitational well.

Sometimes those gravitational wells are adaptive, right? You have an exercise routine that you do. You have to travel, so you have to give up the exercise routine. But when you come back

home, you fall right back into that. But sometimes those attractors are maladaptive, right? We do things without really realizing it that are not good for us.

I use the joke of – it's not really a joke. But if your weekend routine is to curl up with a bottle of vodka in the dark for 48 hours watching Netflix, that's an attractor. That's a stable state. And you're trying to cope with the world, but it's not the healthiest way to do that.

[0:23:29] RT: And perversely, it's a perverse decisive piece of terrain for that kind of scenario in an odd way.

[0:23:35] DC: It could well be. And you're not treating that terrain as it should be treated.

[0:23:39] RT: Right. So another way to think about it is a decisive terrain is kind of sacred ground in some ways.

[0:23:45] DC: Absolutely. And that sacred ground can again be adaptive in some cases. And in other cases, what you hold sacred might not be so adaptive. And even if it works for you, it might not be working for the people around you, which then targets that network that we require as human beings to survive and be resilient.

[0:24:05] RT: I want to go to another quote. You're talking about the Strait of Hormuz. And I'll read this just so I don't miss something that leads me to where I'm going here. 21 miles, 20% of the world's daily oil supply. The disproportion between these two numbers is not coincidence of geography. It's a signature nonlinear system where the cost of disrupting a node scale is not with the node's physical size, but with everything that flows through it.

Okay. So, I think I have a handle on what you're talking about here, but I can't claim 100%. And I know a lot of people are going to maybe spin a little bit with this. But I know this is an important distinction you're trying to make for people to understand. So, let's break this out so you help them understand what you're talking about here.

[0:24:49] DC: Yeah. Nonlinear, right, is one of those dynamics that it's like gravity. It's always at work in the world, but we just don't see it. We do sometimes feel the impacts. And nonlinearity

can refer to two things. The first is that there's no straight line in a complex world between cause and effect. And we don't like that. We like simple narratives. A happens then B happens. A must have caused B. Right?

I say this haltingly. My child gets a vaccine. 9 months later, my child is diagnosed with autism. The vaccine caused the autism. It's just not the way it works. Right? I understand trying to simplify the complexity, but that's not how vaccines work, and that's not the way the world works, unfortunately, or fortunately. Depending on your mood at the time. There's this notion of there's no straight line between cause and effect.

But the other aspect of that and perhaps more relevant is that small changes, small inputs can have outsized impacts or outsized outputs at the end. Right? Small changes. Even in the Hormuz, right? That small change of closing that straight has an impact globally on inflation rates. Certainly, has an impact globally on the price of gasoline at the pump. Right? That's an example of a nonlinear system. And that's how complex systems react in nonlinear ways that are hard to forecast. I don't want to say it's impossible. It's sometimes possible. And that's why we talk in probabilities all the time, which again people don't like to hear. I want to talk in terms of certainty. If I do this, what's going to happen? Well, I don't know. Or it depends. That's what a complex system scientist would tell you. You're going to have to try it and then remain open to the feedback and adjust to that feedback coming in in real time. Which again is not easy to do.

[0:26:39] RT: Okay. As I was preparing for this, your paper got me thinking. You wrote here, "The Islamic Republic spent four decades, 40 years, designing a capability not to win a conventional war against a superpower, but to survive them." And I think if I take what you've just been talking about regarding decisive terrain, the story I make up based on what you've written, and this is what I want to check out, is Iran, 40 years ago, made a decision about what decisive terrain is for them. And everything else was fungible could be adaptable. And somehow, that's allowed them to survive for 40 years in the face of nobody likes them.

How do you manage that process for that length of time and hold people who are affected to it together in some way shape or form? I mean they're still a country. They haven't revolted internally. But how's that all holding itself together over this period of time? It's a weird question maybe, but I thought maybe you'd take a swing at it.

[0:27:40] DC: Yeah. Well, there are certain things that hold people together, and shared purpose is a powerful one, right? And this starts with the Islamic Revolution back in the 1970s. And the power of that shared purpose can hold for a long time. But no condition is permanent, as we say in the complex systems world. Not Iran. Unfortunately, not even the United States. There's points at which systems change.

But they have this shared purpose. They've had it for 50 years at this point. Is it burning itself out? There are some signs that would suggest that, right? People said, "Okay, we have this shared purpose. And we'll subject ourselves to this authoritarian Islamic rule because we all have the power of this shared purpose." Right? But we have seen in Iran over the last several years the protests that are starting to happen. People are getting fed up with the shared purpose. They are no longer aligning to it as they were previously.

There's a sign there that, hey – and anybody would read it this way. Perhaps regime change is possible. And I would even agree to that. Perhaps it is possible. Striking it is not the best way, right? Or it's not the only way. You have to go at this in multiple ways. And it takes a lot of time and a lot of resources, which means a lot of money. This notion of shared purpose, to what extent it's holding people together, I don't know. But I do know this that it is powerful and it is holding people together. How long it lasts? I can't say.

[0:29:12] RT: And you contrast that with our side of the story that's been delivered to us, which was we could get in and get this done and get out rather quickly, the regime change that happened. And the whole area will be better for it. And now we're in this situation that doesn't have a clear end point.

From your world in military, and maybe this not a place you want to speak to per se, but are you uncomfortable as somebody in the field to say are we in something that we don't know why we're here? How do we get out? What's the endgame? Is that a concern that happens on the ground with people who are actually having to execute?

[0:29:48] DC: In a word, no. And I bring this out in *Heard*. The book, right? The invasion of Iraq. In 2003, I pushed the go button, or I believe button, with everybody else. And Colin Powell was

at the UN, and he said, "Hey, these aren't assertions. Everything I'm about to say is backed by evidence." Well, we find out later it was not. And even Colin Powell was dubious. He had said to an aid of his, "What are we going to do when we cross the length of Iraq and figure out that there were no weapons of mass destruction?"

So, at the level of the soldier, or the sailor, or the airman, or the marine, this is an authoritarian system. If those at the top say go, they're going to go. And we did have discussions day in and day out, particularly as Iraq evolved, whether what we were doing was even the right thing. But we also recognize that there was no power that we could muster that would change or influence things. And you start to tell yourself stories. We all do this, right?

There's this notion of value, right? We don't attack sovereign nations if they're not a threat to us. And then there's this behavior. We are attacking a sovereign nation that likely was not a threat to us. How do we gloss that over? Right? And this is cognitive dissonance. How do we quell the dissonance? Well, we tell ourselves a story. And the story I told myself, and I'm sure my teammates did as well, is that for me in particular or for us in particular, we were in places like Iraq, or Somalia, or Yemen going after or targeting some of the nastiest people on the planet.

And regardless of whether we should be there, we were there, and we were going to make that deployment or that action meaningful in some way, shape or form. And that's what happens. I don't think that the average soldier, sailor, airman, or marine is questioning this right now. They're ready to go. And at the end of the day, this has been known for a long time, while we swear to support and defend the Constitution, that's an abstract document. If your teammates are going, you will go for them. And most likely, like me, you would never question it.

[0:31:54] RT: Yeah.

[0:31:54] DC: That's the very human aspect of all of this.

[0:31:57] RT: All right, let's shift from all of that to you. And that you come back, you leave the military, you go back to school. Now you got a couple masters in your back pocket. I don't think your learning journey's over yet. You're still going. You're a teacher now as well. Part of what this podcast is about is to give people access to means and resources of which they could develop

some of the things that the guests on the show talk about. In this case, complex adaptive systems.

But let's begin with you. Take us a little bit to your decision to become a student and to study this topic. What drew you to that? What propelled you to that? How's that worked out for you? What was learning like being a student again after all that time? Because a lot of people are going to think about this journey in some way, shape or form in their life, whether it's complex adaptive systems or interior design. What have you learned about adult learning and yourself that surprised you? And what worked and maybe lessons learned here?

[0:32:54] DC: One word, curiosity. For people of my ilk, right? Since the time I was a kid, you look at the sky and say why is the sky blue? Well, I wasn't satisfied with the answers that I got. Why are plants green? Why are things the way they are? And some of these things we can't know yet or we don't know yet, and we may never know, but some of the things we can know. And that just fascinates me, right?

What is photosynthesis? How does it work? Why is the sky blue? Etc., etc. Why do groups of people behave in ways that are largely inexplicable when they're handed information that has been fact checked to the nth degree, but they won't change their beliefs? Why was it when Copernicus, and Kepler, and Galileo said, "Hey, the sun is actually the center or at least the gravitational center of the solar system." They had the proof right there. You couldn't debate it. Why was it that a vast many people simply couldn't accept that? And here we get into human complexity.

It was questions like that. Mentors along the way that said, "Hey, what you're thinking about here is this new science of complexity," which I became aware of even before I graduated from college. When somebody said, "Hey, it could be in the future that we'll stop having physics envy and we might start having biology envy." And now those things are combined in the complex systems world. It was of sheer curiosity.

What's it like going back to school? I loved Oxford. It offered me an opportunity. And HEC Paris, right? That program, that joint program. It offered me – A, I love to do was travel, meet new and

interesting people. And these new and interesting people I did not have to put in detention facilities. That was cool.

And Oxford and HEC, as you well know, was read the research, write a paper. Well, that's two things I love to do. But at some point, math is the language of the universe, at least as far as we know. You got to get back to it. And that was really difficult. I was a budding scientist in the 80s. I'd been up through differential equations and all those cool things. But I thought when I was done with that kind of calculus, I would never have to do it again.

And so coming back to it 35 years later – or computer programming. When I applied for the program at Arizona State, it was a physicist. A great guy, much younger than me, who interviewed me for the program. And he said, "Hey, how's your math?" And I said, "Well, I can spell differential equations, but I can't remember anything." And he kind of chuckled. And I said, "But I'm a quick learner. I will relearn. I will do what it takes." And his next question was, "Okay. Well, how's your computer science skills?" Because we can't envision – take the climate. We can't look at it and go, "Okay, here's what it is, and here's what's going to happen." Doesn't work that way. There's too much information. We need computation. We have to build models that give us some indication of what the future might look like. And those models obviously involve computers.

When he asked me, "How's your computer science?" I said, "Well, I did well in basic plus my freshman year in college." And he laughed again, and he said, "That's a dead language. Nobody uses it anymore." I'm like, "Okay." But again, I reiterate, I'm a good student, quick learner. Not so quick, but I can learn. And these days, I am not a mathematician or a computer scientist. I am a mediocre mathematician and a mediocre computer scientist. At best, I can make do. And when I can't make do, I have people in my network that I can reach out to and say, "Help me, please."

But it's all been rewarding. It's been wickedly frustrating. But it's always a rewarding journey. It's a deliberate practice. It's something that I did in the SEAL teams. A deliberate practice means you are actively going out of your comfort zone. Not too far. Because if you go too far, that's too much stress, and you're going to back off. You have to dip a toe in the discomfort, right?

Some out there will say you have to be 15% uncomfortable in order to learn. Well, I don't know how you would measure that. But all it really means metaphorically is step outside of your comfort zone for a little bit. See what you learn. Come back to your comfort zone, and reflect on it. And that has worked well for me.

[0:37:08] RT: Okay. So, you just said something here. Let's play with this a little bit. Deliberate practice. In your experience, not just in your work as a athlete, fitness, what are the essential component elements of an effective practice? That if you have those in place, and you show up, and you execute on those, you're going to make progress in your opinion?

[0:37:27] DC: Yeah. And that deliberate practice is very simple. The effective element is step outside of your comfort zone. That is all there is really to a deliberate practice. It is done for the express reason of improving a particular skill in the world of athletics and in the world of the SEAL teams as well.

So, we do a lot of shooting in the SEAL teams. And a nondeliberate practice would be going out to the range and just having a good time and putting rounds down range. You don't really learn anything from that, but it's important. It's sometimes fun. But going out to say, "Hey, today I'm specifically going to work on drawing from a holster and shooting a plate as – it's only 6 inches in diameter. At 10 or 15 yards away, in under one second." Right? That's hard to do. That is a particular skill that you are working on. It will require you to step out of your comfort zone. It will cause you to fail, and learn, and iterate. And you're going to fail and learn, and fail and learn, and fail and learn. And eventually, you keep getting better at that skill until you get to the point where you have mastered it. That's what a deliberate practice is. It's no more complicated than that. Step outside of the comfort zone to work on a particular skill.

[0:38:42] RT: All right, so we're coming down to the end here. I wrote this question down. It's the third question from the end. And when I wrote it down, I said Dave's probably not going to want to answer this question.

[0:38:54] DC: Uh-oh.

[0:38:56] RT: How do you think this thing in Iran ends?

[0:38:58] DC: I have no idea. It depends. It's spoken like a true complex systems scientist. I can tell you that it will not end in a way that we predicted. It just doesn't work that way. Now, could it be favorable? There's still that chance. Could it be unfavorable? There's that chance as well. I just simply do not know.

[0:39:18] RT: Anything we didn't talk about here that you want to put in here in the context of what we've covered and complexity that you think be useful for people to know or think about?

[0:39:29] DC: Dissent. There is that notion of complexity and human relationships when someone disagrees with you. My selfish take there is *Heard*, my book, is really revolves around that single word, dissent. And our ability or our inability to metabolize it. And when you hear dissent, we tend to think of it as a threat, or we tend to see signals in the environment that don't align to how we think about the environment as errors when it's they're not that way necessarily. They could be corrective signals.

And I would encourage people, it's such a powerful word, right? It runs throughout history all the way back to Gilgamesh. If you've ever read the Epic of Gilgamesh, at least the oldest historical work in the world that we know of. It didn't exist as a word back then, but Gilgamesh and buddy Enkidu certainly showed dissent against the gods in their behavior.

And on throughout history, Socrates was another famous dissenter. But he didn't have a word for it. It's not until you get to Rome and Cicero where we get this word dissentio. I disagree. And our relationship to that word. And in most cases, if I say something to you that A causes B, I have this innate expectation that you're going to agree with me. And when you don't, this creates a cascade in the brain that doesn't work out well. I'm expecting a reward. You're going to agree with me. And what I get is not that reward. And it can really make me angry. Right?

If you can pause, slow down, breathe for a second, and consider that your disagreement doesn't mean I'm a bad person. It could be an adaptive signal, a corrective signal that helps me modify my beliefs and improve them for the better. And it is really a word inside of complex human systems that we don't handle well. And I would encourage people to think about it and try it out.

And even to reflect on what happens when their kids disagree with them. Or what happens when their employees or their bosses disagree with them? And how might we improve the system, here's nonlinearity, just by listening to dissent that might have some massive outside impacts on the other side.

[0:41:52] RT: It's a useful distinction you're putting forward here. Meaning I think that how I'm interpreting part of what you're saying by embracing dissent as a concept of value and a learning modality, it possibly has the potential to take the personalness out of the dissent. We tend to get affronted that somebody just didn't agree with us? I'm going to take that one to heart. I may even look up that book.

All right, so we're coming to the end here. Anything you want to say that you haven't said in the context of what we got here to do, or anything else?

[0:42:25] DC: No, I think you led the conversation well as you always do, and I appreciate it. And I hope your listeners appreciate it as well.

[0:42:32] RT: Okay. For our listeners, Dave and I will assemble a list of resources. The book *Heard*. We should also put a plug in. You have another book sort of in the oven baking.

[0:42:44] DC: *Heard* is the book in the oven.

[0:42:45] RT: *Heard* is the book in the oven. Okay. All right. All right. Good. Let's get it out of the oven. And any other resources that you want to pass over to me that we'll put in as links that people can chase around? And I will put the Substack link in there. You're starting to become quite regular in that world. And the writing is good. And it's topically related to things going on in the world, so they can pick up some good stuff there too as well.

[0:43:08] DC: Cool.

[0:43:09] RT: Mr. Cooper, thank you very much for spending time in the swamp with me.

[0:43:14] DC: That's a great way to put it. I would go into any swamp with you, Rick. Thank you for having me.

[0:43:21] ANNOUNCER: Thank you for listening to 10,000 Swamp Leaders with Rick Torseth. Please take this moment and hit subscribe to follow more leadership swamp conversations.

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