

Polyvagal Theory with Stephen Porges

Stephen Porges: [00:00:01] to be able to be supportive to those who are around us if they're feeling anxious or uncomfortable we can't just say to them forget it It's not important Polyvagal Theory says our goal our responsibility is to support those around us that they feel safer.

Diana Hill: [00:00:19] You're listening to Dr. Stephen Porges on psychologist off the clock.

We are four clinical psychologists here to bring you cutting edge and science-based ideas from psychology to help you flourish in your relationships, work and health.

Debbie Sorensen: [00:00:39] I'm Dr. Debbie Sorensen, practicing in mile high Denver, Colorado.

Diana Hill: [00:00:43] I'm Dr. Diana Hill, practicing in seaside Santa Barbara, California.

Yael Schonbrun: [00:00:47] From coast to coast, I'm Dr. Yael Schonbrun, a Boston-based clinical psychologist and assistant professor at Brown University.

Jill Stoddard: [00:00:53] And from sunny San Diego, I'm Dr. Jill Stoddard, director of the Center for Stress and Anxiety Management.

Debbie Sorensen: [00:00:59] We hope you take what you learn here to build a rich and meaningful life.

Diana Hill: [00:01:02] Thank you for listening to Psychologists Off The Clock. We are all feeling stress and anxiety right now with the Covid-19 virus, um, resulting in school closures and work closures and just a lot of uncertainty about what will happen. And we're so fortunate to have on the show an expert on the physiology of our autonomic nervous system. How stress and trauma impacts our bodies and the role of social connection and helping us. and feel safe Debbie, it's so good to see you and hear your voice. We've been checking in quite a bit and I'm wondering how are you holding up during all of this.

Debbie Sorensen: [00:01:37] I'm holding up. It's stressful. I definitely feel anxious and I feel a lot of that uncertainty and just worried about what will happen. I think I'm, I'm on edge where even little decisions I have to make feel like a really big deal and every little thing that happens, I just, yeah, I'm definitely, I'm feeling the stress that a lot of folks are feeling right now. How about you.

Diana Hill: [00:02:01] I can relate to being on the edge. We had to go downtown today to pick up some tile for a bathroom that we had to fix and. My, we're in the tile store, I have my hand sanitizer, and I look over and see my youngest child with his mouth on the counter and I almost lost it. And that's sort of the kind of level I think that all of us are at right now, that not only are our threat systems maximized, which is what a Dr. Porges I was going to talk about, but we're kind of snappy towards each other and we're also creating threat in each other when we, when we're that way.

Debbie Sorensen: [00:02:35] That's right. And another thing that I think a lot of us are experiencing right now is, is just a little. Feeling of loss and grief, potentially people that were worried about potentially losing her at risk, but also around things getting canceled. You know that vacation, you've been planning for a long time and you decide not to go, or the sports or music performance you've been preparing for and it's canceled.

It's just, it's very hard, I think, to give some of these things up right now. A lot of emotions that we're processing.

Diana Hill: [00:03:03] And then the uncertainty of it all our mind wants to have a sense of when is the end date. So then, then I can start my life again and no one can really tell us that. And I think that's just like the breeding grounds for anxiety.

Debbie Sorensen: [00:03:15] I noticed I actually felt better once my school, my kids' school is actually closed, because then I said, okay, three weeks we're going to figure this out. But I think just the not knowing was just driving my mind a little bonkers. So sometimes that uncertainty is actually the hardest part.

Diana Hill: [00:03:32] what Dr Porges is talks about today as well is the role of social distancing and all of this. Because as mammals, our nervous system is really regulated by human connection. his polyvagal theory, a lot of it's based on this Vagus nerve, which is this 10th cranial nerve.

It's the longest nerve in our body. It's fascinating. It goes from our head, moves through our heart all the way down to our gut, and it's responsible for regulating our autonomic nervous system for when we are stressed, helping us feel safety and. What happens is we have this lower part that connects to our gut, and that's the reason why JV, when we're stressed, we get stomach upset or people that have gastrointestinal stress associated with anxiety, but the upper part moves through our heart and even into our face and that part he calls it the heart face connection. The heart face connection of the Vagus nerve is all about helping us connect to each other. Emotionally being able to cue the cue into each other's eye movements, facial movements, and even the sound of our voice.

So right now, when we're engaging in this social distancing, or even looking at somebody in the store and like, Ooh, are you a risk? To me it is. It's, it's very threatening to us as a human species because we're mammals and we want to, we want to gather together and be, and feel safe in groups and we can't do that right now.

Debbie Sorensen: [00:04:53] Oh, I'm so experiencing that. I just think I'm hyper vigilant on the lookout for any breach of, you know, germ transmission rules. And it really, you feel it physiologically.

Yeah. Well, we came up with a few tips that we're trying to use ourselves that we thought might be helpful for our listeners and to start with.

It's important, I think for people to be aware that a lot of therapists right now are offering online telemedicine sessions, so you can find a therapist you can talk to from your house if you're really experiencing a very high level of anxiety and think it would be helpful to talk to someone.

Diana Hill: [00:05:29] absolutely. I think the other tip that Debbie and I. Maybe haven't been following so much, and this is coming from not following in deciding

that we need to, is that we need to live it our cable news and social media and when what happens is we just multiple times per day, if you are going through and scrolling through that newsfeed and clicking on the Covid-19 bait, it's activating your threat system.

Find a couple sources that you trust and check them a couple times a day as opposed to all day long. It's also important to think about, this isn't a fire that's coming at you really quickly, that you need to have that news all the time. It's moving, you know, it's moving within a day's time. So you'll get enough information by slowing down your check rate, and it will also help your, your, um, probably your stress and anxiety levels.

Debbie Sorensen: [00:06:19] That's right. It's a fine line between staying informed and staying. So overly informed that you're down a rabbit hole. And so you want to find some moderation. And also, I think technology can be quite useful here if you use it to stay connected with people. You know, if you're at home quite a bit by yourself working from home right now, it's a good time to, you know, FaceTime with grandma or whatever the case may be.

To use technology to stay connected in a way that's safe.

Diana Hill: [00:06:46] absolutely connect with nature. We go way back to an episode that Debbie and I did, and I think it was like episode 29 all about the benefits of nature. This is a great time. If you were able to get out of the house, go out and find some open space and connect with this. Bigger thing of planet earth. It really helps, uh, to feel a little bit more spaciousness, but also Sort of let yourself regulate with the rhythms of the earth. At the same time, if you can't get out or you choose not to, you can also bring nature in and find experiments to do with kids is if you've loaded up on beans, like most of us. There's no beans anywhere. If you've got dry beans, you can try sprouting them. And that's sort of a fun process to do with kids, to grow a little bean sprouts and turn them into plants. And that's bringing nature inside. think about ways you can connect with growth.

Debbie Sorensen: [00:07:38] I went on a walk this morning with my family and it was so nice to get out and get some fresh air and see other people walking around and people weren't really in contact physically with each other, but it was just nice to be out and see people and breathe fresh air. Yeah.

Diana Hill: [00:07:52] and move your body.

We have a treat for you coming up next week with Kelly McGonigal. So take a little break from the coven 19 podcasts and turn to Kelly McGonigal on her book, the joy of movement, which is so fantastic. It talks about the power of movement on mental health and maybe difficult for you to get your normal exercise routine or movement routine right now in, maybe you're not going to your class, but it's an opportunity to try new programs.

So try out some high intensity interval training. With the seven minute workout or go to a online yoga class, or even just play inside with your kids. Play some hide and seek and don't forget to move. It's really important in terms of your mental wellness.

Debbie Sorensen: [00:08:28] Yes. It's also a good time to just reconnect with your values. To me, it's been such a perspective shift. I've been stressing out about a number of things the last few months and all of a sudden they seem less

important, and I think this is a time. When we can turn toward what's most important to us.

In fact, I think you can use your anxiety if you're feeling it to point out what's really important to you right now that that motto from Steve Hayes, we hurt where we care. I think just this is a time to reflect on that and to really notice what matters.

Diana Hill: [00:09:01] It also really reminds me of a couple of years ago when we had, um, the fires and the debris flow in Santa Barbara and basically the town shut down. We had to cancel everything. All the holiday things got canceled. And we drove away in our car with our little box of goods from our house not knowing what we were going to return to.

And I just remember this feeling of all that really mattered. Was in this small space together. It was a really important time for our family and a really grounding time just to not do all this, all the doing that we've been caught up in, and that's maybe an opportunity for us to reevaluate, reevaluate a little bit how we want to return when we slowly do return.

Maybe there's some things you want to change up.

Another thing that was really powerful during that time is when we, when we did a drive out of town, we started seeing all these signs about the first responders and the firefighters and all the people that were staying and working so hard for us to save our home.

And that really connected to a value of mine of, um, just sort of helping each other out. And I am thinking about all the people right now that are working so hard to help us out, to stay safe and protect us.

Debbie Sorensen: [00:10:12] Yeah. I think near and dear to my heart are healthcare providers. I work with a lot of healthcare providers and they are feeling a lot of stress. They're on the front lines getting ready to help people, you know, showing up at work at hospitals and clinics, and you know, they're going to have a lot of highly stressful situations and hard decisions ahead.

So shout out to all of them. You were working so hard so we heartfelt appreciation. Thank you.

Diana Hill: [00:10:37] And so the next step is do some things that you've been meaning to do. So your home, you've got some time. Like maybe some online learning, and this is our plug for Praxis because it's a great time for you if you're a therapist, to do all this stuff that you've been meaning to do and, and read the books you've been made to read.

Great time to learn. ACT practice has online learning for ACT. It has online learning for the DNA model with Louise Hayes, who we had on the episode away a while back and using active teens. Uh, you can also. Learn more about MBSR for teens with the learning that's coming up soon, and you can access all of it from their website at Praxis, cet.net you can also get it through our website.

You can connect you there. And if you're interested in a bootcamp in the future, there's a discount code through our website if you want to sign up for that. So if you're a therapist, you want to deepen your study in the most cutting edge approaches to mental health checkout practice, and it's a great time to do it.

Debbie Sorensen: [00:11:35] Great. Another tip, practice what Diana termed pro social distancing. So we're all doing this for a reason, and what you can do is

connect to the bigger value behind why we're doing social distancing. There really is a pro social reason we're doing this, which is focusing on helping others and connecting to a bigger whole.

You know, we're. We're coming together as humanity here and, and you can also find smaller ways to be a pro social service. So you can find a neighbor that might need some groceries delivered. You can call a friend who you haven't talked to in awhile. And doing this social connection has the benefit as you'll learn today of con, of activating your vagus nerve and through connections.

Diana Hill: [00:12:19] absolutely. And another way to activate your Vagus nerve is through breathing. Dr Porges will talk to you about this on the show that pranayama a sort of deep breathing from yoga and deep, um. Breathing practices from yoga can be really helpful in calming your nervous system down. And I'm going to record a prominent pranayama for all of you to listen to.

We'll put it as a separate episode right after this one, if you want to listen to it and share that with your friends instead of maybe sharing some of the scary stories.

Debbie Sorensen: [00:12:52] Well, one thing we can all do right now is come together. The world I think has felt so divided lately, and this is all just a big reminder that we all are all connected and we have to work together and act like all of humanity is in together on this.

And we're all a team.

Diana Hill: [00:13:07] yes, and look each other in the eye when we get a chance to spread, um, connection and support. And it's good to see you, Debbie.

Debbie Sorensen: [00:13:16] Good to see you too. Good luck, everybody.

Diana Hill: [00:13:20] today We have the honor of talking with Dr. Stephen Porges He's a he's a professor of psychiatry and researcher whose work offers a paradigm shift in our understanding of human physiology human connection and feeling safe Dr courses is a distinguished university scientist at Indiana university where he directs the trauma research center at the Kinsley Institute He is professor of psychiatry at the university of Northern North Carolina professor Emiratis at the university of Illinois at Chicago where he directed the brain body center and the department of psychiatry and professor emeritus at the university of Maryland where he chaired the department of human development and directed the Institute For child study in 1994 he proposed the polyvagal theory a theory that links the evolution of the mammalian autonomic nervous system to social behavior and emphasizes the importance of physiological state and the expression of making real problems and psychiatric disorders Welcome dr forces
Stephen Porges: [00:14:13] Well thank you very much Diane It's a pleasure to be here and to kind of share my views and to see where we'll go today on the interview

Diana Hill: [00:14:21] Yes And as we were just chatting before we started we're at the time of the Corona virus and I'm sure that we'll enter into some of our discussion but what you mentioned is that The polyvagal theory is more about it's all about being human So sort of everything is welcomed there and talking about the polyvagal theory and it really can apply to a lot of different areas of our life in our discussion

Stephen Porges: [00:14:47] Absolutely In the core uh value or review within polyvagal theory is the quest for safety And then it starts making sense because

as mammals that's our quest to SPE safe And if the accuser around aren't safe our body reacts to that and we'll get into that

Diana Hill: [00:15:08] help us maybe understand what what is happening for us humans when we don't feel safe in terms of our physiology and our autonomic nervous system

Stephen Porges: [00:15:18] Are uh we need to think not in terms of an autonomic nervous system and the central nervous system but as an integrated nervous system that when our brain starts processing cues of danger it shifts our physiological state So our body moves from being an accessible welcoming socially connected organism It feels comfortable in the arms of others a vulnerable nervous system that recruits different neural structures to mobilize to fight or flee And if in certain situations we can't escape or we can't ah appropriately so that we're safe our body has a literally a secret backdoor It shuts down

Diana Hill: [00:16:01] so In your theory you talk about sort of these three systems there's the shutdown numbing system that as if you're a therapist it sounds really familiar in terms of we're talking about people that are dissociating or um really disconnected from their body And then there's the the the flee or the fight response And then the third response of of um sort of social connection as being Another route And what I get curious about is when we're experiencing threat on this more global global way how that is also impacting our ability to use social connection and what's happened what sort of how it's going awry A little bit Like our our or our co-regulation is isn't working so well Um right now

Stephen Porges: [00:16:46] Yeah We have to, we have to put it in Let's go intellectual for a moment Then we'll Okay Okay Yeah

we see the mammalian nervous system and the human nervous system We're mammals as having tremendous flexibility In all kinds of settings and contexts So when we're not getting cues of safety our body gets at the States of defense Yeah

we live in a world where human beings are given tremendous responsibility for their feelings and their thoughts When it may not be a ma maybe they don't have that much control Maybe a lot of our behavior our thoughts our feelings especially our feelings are more on a reflective level So maybe our feelings of safety are really reflective just as well as our feelings danger are reflexive So if that's the case then therapies need to be a different insight or a different portal into regulating those underlying States that would promote feelings of safety So let me kind of unpack this again I came up with this term called neuroception And it's really our nervous systems identification evaluation of risk in the environment from safety danger to potential life threat It's not a conscious awareness It's our body's reaction Our body reacts and then being as I say having big brains and being creative individuals develop narratives Now these are are called personal stories they're narratives and we tried to justify Our feelings So if we are have feelings that are not feelings of safety I'm looking at you and you're in my room I'm really mad at you you created it And this is the danger of what's going on now with the covert dine team that we're being impacted on so much related information that we're going to misread the cues of those who are close to us

Those that are coming towards us to be supportive of us will misread them as intruding and we'll get reactive to them and they'll get reactive to us And there's a second part of this as we getting with infectious disease which the

Right

is in space Is the way that we're

right

it

right

are we really saying We're creating another disease I'm not going to go into the parity of disease because we have to be physically healthy we can even be mentally engaging So I'm not saying separation is bad I'm saying there's a consequence and we need to be aware of it the consequences that we're not getting enough A social interaction face to face where we read the cues of others zoom and Skype might be okay but there's certainly not the same as being sitting across from someone and you listening to their voice and you see their head changing uh posture The facial expressions changing you place your hand as it would do or you just touch them and they now feel backing contact Um or you may see friends who say would you like a hug And they'll say Oh now I really I need one And and that uh those opportunities aren't going to be there for awhile we are now being confronted with actually something that is very dangerous and we need to evaluate the danger for what it is It is a life threat But our bodies can't react like a life threat because we'll just immobilize give up we'll become hopeless

Yeah

not good for anyone It's certainly not good for the species it's not good for us personally there's this tradeoff between uh the ability to separate to contain infectious disease the minimization of the necessity of social interaction

Diana Hill: [00:20:48] Can you talk more about this social engagement system and how it relates to your theory and in particular I think it'd be helpful for people to understand the Vagus nerve and what you're alluding to in terms of the importance of facial expression and hearing voices people's

Stephen Porges: [00:21:03] voice

we were given in our evolutionary history we were given this wonderful Vagus circuit it that bagel circuit calms down It turns off the sympathetic and adrenal reactions It makes us feel safe And that Vago circuit is regulating in a part of the brainstem that also regulates muscles of the face and head Are autonomic regulation moved to our facial expression ability to listen and the intimation of her voice So that became a social engagement system if we go back to the history of it evolutionary history it was how the mammals Their physiological state to other mammals do doc do is communicate to them They were safe to come close to So mammals to survive how to code regulate I did connect and had to cooperate and that was all being done through queuing and often through vocalizations before there was ever any language as therapists know the intonation of their client's voice tells them an awful lot And the way they speak to their clients have major impact on their clients So our nervous system has a portal to pick up cues of safety through intonation of voice And we see this with a mother with her baby

The end We also see I often say do great with babies Fathers do better with dogs or their pets and it's because the father will use a pet oriented mother ease type voice with the dog but with the child so and the dog we talk to our dogs like we would talk to an infant

Yeah

the melodic voice All mammals are say most mammals uh within the frequency band they use for social communication That modulation in there is acute to the nervous system to be safe that they're setting Now when we bring this back to covert 19 we're because we can turn the news on and we're not hearing voices that make us feel safe.

Diana Hill: [00:23:17] Or we're not hearing voices at all.

Yeah

I think for many people they're not turning on the news They're just scrolling through their phone and what what happens is that we put the tone on ourselves Many times when I'm in session I'll have clients bring in their texts like on their phone and they'll read a text like my sister said this and when they read the text they'll read it with a tone of voice like that Their sister is really mad at them

Yeah

And like where did that tone of voice come from Because there was no tone of voice But we create an interpretation of a tone of voice when it's not there And I think that's also part of this very interesting um world that we live in is that we're there's a tremendous amount of information that's being shared without tone of voice and without facial expression And it leaves the human mind a lot of room to make interpretations or create story

Stephen Porges: [00:24:06] Yeah. But

it

there's also uh the politics of the country not warm and connected and accessible And so when you look at politicians who have responsibilities our safety and health they're angry they're not conveying to us that

Yeah

be taken care of

right

you know there's two sides to the argument that saying Is it really possible to be taken care of So are they really telling us the uncertainty And that's important for us to know Or if they could talk to us in a more connected way we be able to cooperate in a way that might help solve problems? And I'm I'm much of course uh a fan of the ladder we can watch uh people who who are actually pronouncing what's going on and you can look at their faces terms of uh So if the muscles of the lower face are driving everything in the muscles of the upper face are blank are turned off dealing with someone who is in a very stressed or fight flight state but if the upper part of the face becomes softer exuberance on the voice starts having a melodic tone to it feel very comfortable.

You can literally deal with whatever they're saying.

Diana Hill: [00:25:29] Yeah. Yeah. And that's where this concept of, of co-regulation is, is so important, and often gets kind of missed in, in, in our conversations. Yeah.

Stephen Porges: [00:25:41] it gets missed because we place premium on self

regulation.

And even with, in terms of development of children, we argue that it's good for them. They need to self regulate and be a mommy's boy or whatever want to talk about. But in reality, the more effective we are in co-regulating in our world, the more effective we are in self-regulating.

So co-regulation provides us with the physiological resource to be bold, exploratory, and self-regulatory.

Diana Hill: [00:26:16] so what would you, how, how could we co-regulate each other right now? Like what would be a way for people to, you know, besides wash their hands and stay six feet apart, co-regulate around around this.

Stephen Porges: [00:26:31] Well. Okay, so let's go back in time a little bit and let's talk about, what we need So we used to say know I when you talk to people on the phone hearing their voices could say to someone Oh what's wrong Because you could tell from the voice okay so we stripped the voice from the face but the voice was very powerful And this is due to our evolutionary history the intonation of voice as being a major portal for co-regulation But somewhere around I guess would've been the 1980s we stripped the word from the voice and called the email and then it became instant messaging Then it became just texting and in the beginning of the email was misinterpreted by a lot of people just like you're talking about your client and the text people used to say why are you angry at me And what really was was merely a terse statement So we learned we collectively learned to use salutations at the ends or curse message like best or uh warmly or hugs or put a heart down out People are doing that it's really to make people realize that not angry at them.

Diana Hill: [00:27:47] Yeah.

Stephen Porges: [00:27:48] Because without it and intonation the voice, you're clueless about the true meaning of the message.

And so you're asking, how can we help? We can talk on the phone, we can Skype. These are better than total isolation. And you know, we can co-regulate in that way. But we have become, let's say, a culture that is quite. Tightly wrapped. We're an anxious culture. We mobilize a lot and we're being bombarded. With lots of cues of danger and fear in life threat and our nervous system doesn't like that.

Our nervous system wants, wants to know that there is some space in which we are safe we can feel comfortable in the arms of another. And this now becomes the paradoxical situation, uh, when we're very concerned about contamination.

Are we ever going to be safe in the short term of giving someone a warm hug or embrace how our relationships, uh, if we go out of the house, cause we're all afraid now that contamination can occur on clothing and other things.

we willing to hug those that are closest to us?

Diana Hill: [00:29:08] yeah,

Stephen Porges: [00:29:09] yeah

what does hopes that this moves through relatively quickly and it gets contained it becomes you know uh diseases are not we have to be prepared and we have to be prepared for what this, uh, chronic disengagement is do we'll be doing to people.

Diana Hill: [00:29:33] and that there's an opportunity, I think maybe also for some semi, some paradigm shifts to look at ways in which we've already been disengaged.

And how we could reengage in, you know, in smaller groups or smaller communities or with the people that, you know, I've been in much more contact with my parents and saying, Hey, can I pick you up some groceries? I don't want you to go. That was just a trader Joe's. You're going to Costco. I don't want you to go to trader Joe's. I'll go there and I'll get you some stuff. And, and actually that's co-regulating too, because I think. The action of helping or activating that compassion system is very much part of this, as well as when we can see ourselves as helping others or doing this in the service of a greater whole.

It's, it's a, it's a shift from the sort of egocentric, I'm doing this so that I don't get sick, rather, let's all work together to, to have this pass, you know, in a way that our healthcare system can handle it. And yeah.

Stephen Porges: [00:30:28] The interesting part of this is my bias perspective is when feel safe we are an engaging compassionate connected species This Yeah

are that it's only with rappers of defense which are really off almost forced on us by news by religions by politicians we lose the core of who we are.

Diana Hill: [00:30:55] yeah.

Stephen Porges: [00:30:56] The, the

Diana Hill: [00:30:56] So

it's going fine. Finding that core, if it's in a place when we feel threatened, like how you, how you can step into that.

Stephen Porges: [00:31:03] yeah. Or I would even say allowing that core to emerge rather than even finding it.

Hmm

it's like if we're not defensive who are we And it's the issue of accessibility And we're you know there are decades I would say even transgenerational transitions which accessibility is really, people are told, be very cautious about accessibility to authors.

Diana Hill: [00:31:30] and particularly if you have a trauma history as well. This is, this is the, the dilemma, right? If you have the trauma history, accessibility doesn't feel safe,

Stephen Porges: [00:31:39] okay. So let's just think for a moment. of all uh we are traumatized species Let's just start there But we're resilient species that looks for safety and tries to create coalitions cooperative relationships Um we are also a transgenerational law Transgenerational traumatized culture And everyone's family has been affected by trauma Uh w because we're an immigrant population we're a population that has sent its young to war for for decades And there's a consequence to all that And we have to be acknowledged that that what we've done was good to serve was useful for survival but it also was paying a price about our ability to feel safe with others we need to understand that now I started getting interested in in trauma not because I was interested in trauma that my ideas start to provide a useful set of metaphors and understanding

understandings for people who had been traumatized And what I've started to learn that we can learn so much about it is to be a human by studying trauma he starts seeing what's taken away We see the ability to be safe in the arms of another We see the ability to see the world in a positive perspective see the loss of purpose in life then we see even the comorbidities of our health that when we're stuck in a state of either shutting down dissociating or fight flight we see all the comorbidities all the gut problems these.

Uh, disorders that are currently called medically unexplained symptoms like fibromyalgia, migraine, dysautonomia, any are trouble bowel syndrome, that these are not really diseases that have specific organ dysfunction. These are diseases of the nervous system being in a state of defense and not supporting the function of the orchids.

So you start seeing this cluster coming together.

everything is really the story of evolution or the story of the Malawian and especially human evolution And the story is that the earliest verdicts came they were relatively simple organisms And when they were under threat which was not enough food not enough oxygen uh their bodies would just go into a conservation mode and basically shut down the most prune diverted Ritz had very tiny brains so they didn't need oxygen going to the brains

Yes this is one of my little

Diana Hill: [00:34:22] okay

catch lizards and they can hold them on their backs and they're like passed out

Stephen Porges: [00:34:26] you can put a a reptile a state of life threat can hold its breath for several hours.

Diana Hill: [00:34:34] Yeah.

Stephen Porges: [00:34:34] Wow

And that's not doing it's not danger it's appearing not to be alive And you'll also see something linked to that They often will dedicate before they immobilized because having food in your digestive track is metabolically costly So the priority is get rid of it and just hang on nervous system So smart reason I brought up the defecation is that with within humans, when humans are understates of life, that they may defecate or urinate.

And it's not something to be embarrassed about. It's something to do that says this is a very smart nervous system trying to make this adaptive

Yeah

but.

Diana Hill: [00:35:12] still have that nervous system

Stephen Porges: [00:35:14] in place

Diana Hill: [00:35:14] that that old one. The reptile one

Stephen Porges: [00:35:16] Yeah

And that old nervous system is co-opted and does great things because it helps primarily the organs below our diaphragm So it does it's good stuff but it should not be recruited in defense So the issue of our autonomic nervous system is does wonderful things but Don't recruit it in state's defense if it's prolonged

No

the earliest one was this old unmyelinated Vagus that we still have and is primarily regulating below the diaphragm are some fibers that still go to the heart they can still be insensitive recruited we have all through the evolutionary tree or the progression have a sympathetic nervous system and this enabled the to mobilize And when it mobilized and this is part of polyvagal theory is hierarchical so that when you mobilize what do you inhibit You inhibit your digestion And in a sense I always like to say your mother knew that when you wanted to go out to swim and she was after having a lot you can't go out and swim Why Because she'll get cramps and die No What she was really saying is that you can't go out and swim because of the polyvagal theory or mobilizing inhibit digestion with lots of foods in there it's just going to give a bad reaction you're going to get cramps So there's wisdom in some of these folk myths So the polyvagal theory says the second stage was mobilization Now in the world of therapy this becomes really interesting because uh as we become more and more trauma informed we realize that those who have experienced the most uh Let's say the worst traumas they have immobilized and they have been mobilized with numbness and shutting down of feeling their body and this embodiment And those people don't ever want to go back to immobilization So the notion of giving them a hug their body will pull back and they're the ones who often will do high risk behaviors And addictive other addictive behaviors like drugs so their body doesn't calm down cause calming down to them is vulnerability So we're is for many people who are more typically regulated Stillness is that moment where anxiety disappears expands and you have your moment of creativity and spirituality you carry a severe trauma in the street stillness is really the worst place You don't want to be there Now have So what we have seen is that we have two defense systems that are hierarchically organized And if we have used this shutting down one says don't go back there Use Mo mobilization We can see this in many clients They will be tightly wrapped know muscular They'll talk very rapidly There'll be very tense and time is Everything They have to keep moving Time will knock sort of off for them

Diana Hill: [00:38:21] Yeah. And you know, as you do, just talk about one way of helping us sort of. Get our nervous system more into the social engagement realm. This is through co-regulation, but there's other ways too, that people are talking a lot about based on your theory, in terms of how to stimulate the vagal response and the, and the Vagus nerve.

And I'm wondering if you could speak a little bit to those, because that's actually how I found my way to you. I, I was, um, I did a lot of. Chanting in my, um, early on in as a yoga teacher and my yoga practice. And I always found that incredibly healing for me. And then I was working in the inner sorter treatment center and there was a physician there that said, well, you know, that chanting activates that singing, like that aggregates your vagus nerve.

And then he also said, and sodas throwing up.

Stephen Porges: [00:39:13] Well, it's a different Vagus. Just the, this is, see if you, if he were polyvagal informed,

Yeah

though the difference because

yeah

is the uh unmyelinated Vagus pathway that we share with all vertebrates

yeah

up is part of that life threat defensive system. And hierarchical So cues of safety coming through the new violin they turn off the guts Defensive nausea So the the issue is there are certain portals that we have due to our own evolutionary history and one is through breath is why becomes a real interesting ah of ah Way of autonomic state issues Because when we inhale we turn off that uh social engagement Vago circuit that positive one that calms us down of course when we inhale we hyperventilate We become highly mobilized But when we exhale or exhale slowly those Vega efferent are available effects on our heart Calm us down And so part of chanting the uh it's ex it's expiration so was singing but with chanting you're also stimulating the nerves and muscles of the face and those vibratory the vibratory stimulation it's also affecting family of nerves Then in the brain STEM linked to that Vago regulation of her heart So when we smile and we talk with a prosodic voice or even we listen to someone with a prosodic voice face softens we become more exuberant more positive and

Diana Hill: [00:40:58] Yeah

Yeah. You mentioned Peter in the Wolf in one of your writings. I don't know remember where it was, and that was my favorite story to play when I had young kids in the car because I think it regulated me, the sound of the prosody of the music and the sound of the voice. And, uh, and I, and I would do a lot of singing in the car when kids were screaming and they're like, little babies are crying and it, because it.

Sometimes it worked with the kids, sometimes it didn't. But it was to help regulate me. And so it's very interesting to see the science behind. There is such science behind all these ancient wisdoms that, you know, moms have known forever. Lullabies.

Stephen Porges: [00:41:34] You know,

Yeah

to know I I feel I believe is that there's always been smart people and in certain ancient rituals they embedded Uh a deep understanding of the door regulation of our body It just didn't have our language So when you go into yoga and especially pranayama yoga you're dealing with the social engagement system the muscles of the face The other part I want to bring up cause uh to deal with the whole circuit of Ingestion sucks while and breathing

Yeah

this is really the same neural circuit of the social engagement system we often ingest food calm ourselves down

yeah

not to digest but babies learn. Ingesting food is very efficient in calming you down when you're young.

But as you get older, I mean like a year old, social behavior becomes more potent, so it's food won't come you. You need the mother's engagement you the attention it's telling us a lot about What our nervous system needs So in our dialogue what we're really saying nervous system needs is social interaction It

needs it through It needs it through gestures proximity We need to be with others we also know that if people who have trauma histories They would like to be with others but put them in proximity of others What happens They their body says ah don't want to go there again And when they start to create relationships what happens The relationships fail or they they run away they don't their body says safe is a great mobility Violation of trust is where you get hurt It's not a cognitive decision The cognitive decision is I want to have relationships I want to be happy with some of the biological evaluations that this is dangerous And so we need to develop therapeutic models that talk to the nervous system and don't really just talk to our higher structures because as we talk to them don't have all the toolkits to regulate it That's why yoga and breath and rest respiration and singing dance movement all the strategies that the smart brain can implement to talk to the body.

Diana Hill: [00:44:06] Yes. One of my very good friends, um, Gwendolen has developed these songs, circles in our community, and a lot of people aren't going to church churches in the, in the same way that they used to singing in circle and she talks about how singing, singing in circle with others is so incredibly. Um.

Stephen Porges: [00:44:26] Connecting.

Diana Hill: [00:44:27] and connecting and in a way that is different than just even just having dinner with people.

Right. It's, it's profound.

Stephen Porges: [00:44:34] Yeah

about drum circles Drum circles do the same thing and they're quite a unique experience cause you don't know the people around the circle with the dramas when you finish, you think they're your best friends.

So

amazing

kind of moment of why I used the term shared intimacy it's all about social. Gabe, you looking at people, you're coordinating your behavior can be part of that group.

Diana Hill: [00:45:02] Can we talk a little bit about heart rate variability and how this relates to all of it? Because. I feel like I'm trying to figure this all out. I got into the heart rate variability bandwagon and got one of those aura rings that measures your heart rate variability at night. And what actually made me a believer was I was on a retreat, a yoga retreat in Costa Rica, and my heart rate variability according to this ring tripled during that week.

And then I came back and it went back to where it was. So something was happening and it was measuring something. But can you talk about what is heart rate variability and how does it relate to this whole nervous

Stephen Porges: [00:45:39] system

we're going to move from something that is very descriptive. Heart rate variability.

yeah

is has underlying neural mechanisms that represent homeostatic function.

Okay

to go on this little journey heart rate variability is barely the variability of the time between your heartbeats basically saying your heart's not beating and the constant rate in fact your sign your sinoatrial node may be at a constant rate as the Vagus comes down from your brainstem to that Pacemaker It's slowing it up And that's so when you exhale slowly slows your heart rate up We inhale goes back up because the vehicle is being reduced So heart rate variability is merely the fact that your B2B changes are not constant And that could be good it could not be that good.

Okay.

Diana Hill: [00:46:32] so more is not better

Stephen Porges: [00:46:33] Not necessarily

because it's descriptive, because you could have a Rhythmia, which means would be missed. Speeds are, or beats of that are actually fragmented beats you're beat to beat Variability would be very high you wouldn't be very healthy you have eight AFib

right

so they started popping in or proven tricolor contractions They would contribute to the variability But it wouldn't

Okay

you want

Okay

we move into what variability do you want Now interesting part is that the respiratory influence on heart rate produces a variability known as respired Torsy sinus a Rhythmia that can be quantified and that is an excellent index of the Vega Influence on the heart the vehicle tone coming through the new Vagus, the part of your social engagement system. That is what you want more of, because that

Diana Hill: [00:47:33] You

want more of it? Yes. People think heart rate and they think they want low, but with that type of variability, it's an indicator of fable tone.

Stephen Porges: [00:47:39] Of that type of able tone. And

Yeah

really the vagal tone that gives you resilience And I'll explain it a little bit why functionally it's saying that you have more of a break on your heart rate you have a base level heart rate it means that if you have to get up and go up a flight of steps you just take the brake off you don't need to stimulate the sympathetic nervous system because when the sympathetic nervous system gets stimulated your ability to regulate it isn't as tightly controlled as to the Vagus it's like people who you may have as clients uh they may be apparently calm and then they get triggered and then go into rage Which meant that their Vagus inhibition was extraordinarily weak and they couldn't regulate that And so when the system mobilized, there was nothing to keep it contained.

Okay. So the bottom line of what you're saying is, yeah, heart rate variability is important, but you need to know what are, what component of heart rate

variability is changing.

Diana Hill: [00:48:45] and when we're working with things like biofeedback or breathing, that's what they're trying to work on is this heart rate

Stephen Porges: [00:48:51] variability

a

Yeah

biofeedback is actually respired towards science. Ruthie, or what do they call it? Heart rate. Very pulled the biofeedback. It's always our say always. It's usually related to increasing the amount of heart rate variance associated with breathing.

Diana Hill: [00:49:07] and it's related to the part of the vagus nerve that the myelinated part, they can put the brake on things and

Stephen Porges: [00:49:12] And this help regulate system

to neuro regulation of the face and head So when you're a tone gets greater you become more prosodic you become more welcoming more resilient.

Diana Hill: [00:49:28] Okay, helpful. You were one of the early researchers in this

Stephen Porges: [00:49:32] area so it's yeah

hate to tell you how early Yeah But it was in the 1960s yes And when I quote discovered these phenomenon I would I got a lot of pushback from my colleagues because they who had been a relatively famous scientist said to me the reason you have heart rate variability in your data is that you're a crappy scientist That I mean the words weren't quite like that but basically it the assumption that the heart was always being at a constant level only change as a function of context or stimulate It was this very strict stimulus response model When

huh

my work I was bringing into the dialogue that I called the stimulus organismic state response that that organismic state was the intervening variable determine whether a stimulus produced what type of response or another And that organismic variable was always Heart rate variability or vehicle regulation of the heart and now with polyvagal theory it becomes the whole state of the autonomic nervous system is your window into that intervening

Diana Hill: [00:50:43] And where do you see polyvagal theory influencing, uh, whether it's the education system, whether it's, I mean, you talked a bit about therapy, but it seems that. There's a lot of domains that are now using polyphagous theory.

Stephen Porges: [00:50:56] Um yeah

for this way at this stage of my life or career whatever you want to call it It's really interesting because a polyvagal theory is a theory of enabling others to develop their creative ideas And they're in areas like education Now about polyvagal informed schools do we need to creating addiction treatment models Um People are interested in the judicial system and polyvagal theory a people are brought in front of the court and their physiology is just falling apart can't present themselves well Um so you start seeing that it becomes a way of understanding to retune a nervous system to make it more uh adaptable in different settings or resilient Uh Or what I like to say in education create the conditions which that child will be able to learn efficiently and effectively And the other one is even

surgery That if our body's in a state of defense how do we respond to the arena where the state of panic
yeah yeah
even if they Provide drugs Our body knows that this was not where we should be if we're welcoming even to surgery, uh, the trajectory of healing becomes easier.
So we

Diana Hill: [00:52:22] and now in the, in the arena, contagious disease.

Stephen Porges: [00:52:26] Oh,
Polyvagal

Diana Hill: [00:52:27] folly video. Very can show up and give us some ideas.

Stephen Porges: [00:52:30] but, but here's the double edge. So since polyvagal theory also is related to immune function.

Diana Hill: [00:52:37] Yeah.

Stephen Porges: [00:52:37] Okay. So it, so this notion of toxic stress and impact on our immune function, polyvagal theory the body is smart We need to in a sense allow our body to do its healing support our homeostatic functions However um can't just go through the world with wishful thinking is what I'm saying that there's going to be certain toxicities in different environments that we have to be aware of I walk around saying okay Oh stay calm But when someone is not calm telling them to be calm is the worst thing so so basically that's why we're going to Costco in a few minutes My view is sit on the porch and have a cup of coffee by no we're going to go to Costco And that's okay
Yeah

to be able to be supportive to those who are around us if they're feeling anxious or uncomfortable we can't just say to them forget it It's not important that that is

Polyvagal theory says our goal our responsibility is to support those around us that they feel safer.

Diana Hill: [00:53:49] right. And that's what, you know, actually what made a big shift for me in terms of my nervous system around, um, anxiety with all of this was when my, my colleague and copays co-host Debbie, she just sent me this text yesterday. For whatever reason it shifted me. She said, you know. Anxiety is a, is a functional emotion that it's going to motivate people to do the right thing.

And, and when she said it that way, it just helped me sort of understand. Yeah. We, we, it's helpful to have a little bit of anxiety if it motivates us to do the right thing, which is to help take care of others. And, um, and it shifted my whole perspective towards more of a pro social one.

Stephen Porges: [00:54:29] Yeah. As
Yeah

lose the prosocial part cause
Right

It is Mo. So this is like the difference between playing and aggression So if you play with people or Kim sports you're mobilized you use what are the same structures fight flight but you're also using social engagement to contain it So you don't hurt someone if you hurt someone or playing what do you do You look at that person and you say are you okay support and this is part of what we have to

do when we get kind of mobilized realizing that we are sending cues to others may not be supportive.

Diana Hill: [00:55:10] another concept that you've talked about is the difference between empathy versus a capacity, that

Stephen Porges: [00:55:16] It gets me into trouble because my my friends use this to describe what they're doing even though I would Uh reinterpret there They're doing So if you reach into the literature on empathy the idea is that when you have circuits of empathy responding in the brain they're mimicking the circuits of the real pains signals So it becomes you're feeling the other person's pain But when you work with trauma survivors one thing you learned very quickly they don't want their story, their pain to hurt you.

So

Yeah

the worst thing the therapist can can express When a law it says trying to allow or enable their clients to express their trauma histories but compassion is the right thing Compassion is that respect Compassion is the support It's the presence It's the therapeutic presence being there when a person can explain what's happened to them interpretation and sense of the true to be compassionate is when you deal with people with trauma histories they want their voice to be heard.

They don't want you to pick up a gun and kill the assailant. They want their feelings to be heard and they want you to support them.

Diana Hill: [00:56:38] It's very similar thing with grief as well, and one of the reasons why people don't share their grief is because. They feel like if they share their grief, they're going to harm the other. The other person is too much. If I, if I keep on bringing this up and so people end up not sharing because they're because of that, I guess it'd be fear of empathy almost.

That you're going to feel what

Stephen Porges: [00:56:58] I'm feeling I don't want you to will hurt
yeah

and you don't want to hurt anyone and I was trying to get a deeper understanding what grief was from a neuro biological level and it's as if there's it's like trauma It overlaps with trauma there's not a PR uh a perpetrator It's something different So with trauma there can be a target in building the narrative With grief it's just left within you the narrative for grieving very difficult to use a narrative to get out of And the culture says come on enough grieving Let's go to let's go out and have dinner Let's go do a movie Let's do something But it doesn't work that way But The culture as it's changing now where there are people who are now more open about their grieving especially with their pets A loss of a pet People feel okay to talk about dad. They feel when they lost their, their dog or the cat.

Diana Hill: [00:58:01] Yeah, and that's where some of the, again, the old old rituals around grief rituals are actually. Incredibly healing song and being together and crying together.

Or

grew up.

Stephen Porges: [00:58:12] I

Yeah yep

eating perfect ingestion, which is the social engagement system. So if you can't talk, you eat together and just think about how use like having a drink or having a meal together. We use it to, to kind of, uh, become closer to others.

Diana Hill: [00:58:37] I'd love for you to share a little bit about some of your interventions that you're using until we can connect. If people want to learn more about, uh, your theory and, uh, about you

Stephen Porges: [00:58:47] yeah

go to my webpage which is Stephenporges.com Uh and that has links to places but it also has links to YouTube Talks but the interesting one that part that I'm really been working on is really an intervention that is a cow called the safe and sound protocol or SSP marketed by a company called integrated listing systems which is now of unite in United health I guess they call that company And there are now I think 3,500 have been trained to deliver intervention The intervention started off as a five hour to these auditory or computer altered music I initially developed it for kids who were on spectrum it stimulates the social engagement system But the trauma community had heard me talk for years they heard me talk about this intervention They started trying it and it's been through the insight of these trauma therapists that this whole technology has been now modified to deal with trauma what we're learning is that It needs to be done much slower because it's very powerful So just think about listening to a soul and our body reacting to it And reaction is important for the client and also for the therapist the client It basically enables the client To get the bodily feelings without attributing them to another person or context The music is doing this touching something we're we have now several trauma informed therapists who are using it They come from different specialty areas Um many are somatic type therapists Um and what they're doing is being trauma informed they are good observers of their clients they titrate it now it could be 10 minutes a day every other day You know what they're doing is the paradigm to fit the client fit the client's fragile nervous system part of what I'm learning is that cues of safety in the acoustic intervention really an algorithm amplifies the intonation of vocal music Meaning it amplifies or making the nervous system puts it into a state that it can't refuse the cues of say Yeah You know like you talk to your dog pretty boy It can't say no it just kind of opens up if you have a trauma history that opening up that accessibility Is vulnerability

yeah

gives something for the and client to work on beef without that type of triggering the client is saying I want to have relationships I want to be up but this is really say may want to, but your body is still in control and we need to now reeducate the nervous system to be more accessible.

So it's a reeducation program of the, of that system.

Diana Hill: [01:02:03] to be done with a therapist.

Stephen Porges: [01:02:05] done with a therapist

Okay

of a therapist if there's a trauma history

Yes

there is if the individual just has auditory hypersensitivities other symptomatology
uh I had a reasonably real Zilliant nervous system Now

Yeah

just take it home and do it don't I don't that's not my bias My bias is to make sure
that people are monitoring because you never know You don't know

Diana Hill: [01:02:34] so people can learn more about the safe and sound
program through you. And we'll put a link on our website as well. And, uh.
Pranayama and chanting and so circle and breathing and all of those things are
are good as well. And FaceTime with your family right now is also a good

Stephen Porges: [01:02:52] way to

Not necessarily

actually

the Apple computer but real face time Yeah

Yeah..

Diana Hill: [01:02:58] Well, thank you so much, Dr. Porges a delight to have you
on the show and really appreciate your body of work and, um, really appreciate
your wisdom in particular

Stephen Porges: [01:03:07] Oh,

Yeah

you very much for inviting me and I hope this has been helpful to you and in your
constituency Thank you

Diana Hill: [01:03:14] yes. Thank you for listening to Psychologists Off The
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