


Beyond the Brain: How the Vagal System Holds the Secret to Treating Trauma



A Webinar Session with
Ruth Buczynski, PhD
and Stephen Porges, PhD



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Beyond the Brain: How the Vagal System Holds the Secret to Treating Trauma

with Ruth Buczynski, PhD
and Stephen Porges, PhD

Dr. Buczynski: Hello everyone and welcome back. I'm so glad that you're here tonight. We have a *really* special person with us, and we're going to dive deep into the whole concept of polyvagal theory.

This is relatively new and very, very important when it comes to thinking about trauma and its treatment.

It's really important to *get* these ideas because they shed a lot of light on the issues and the doorways to treating those issues.

My guest tonight is Dr. Stephen Porges. He is a good friend by now; he has been part of several series – if you were just part of the Brain Series, you saw him there, and he was with us for that last year and the year before.

But each time we have more and more to talk about, so I always look forward to these webinars with you, Stephen.

Stephen is Professor Emeritus now as well as director of the Brain Body Center in the Department of Psychiatry at the University of Illinois at Chicago. He's also the author of *The Polyvagal Theory*. So, Stephen, welcome – and thanks for being here

Dr. Porges: Thank you, Ruth. It's a pleasure to be back again and I look forward to a very interesting evening.

“Polyvagal theory is relatively new and very important when it comes to thinking about trauma and its treatment.”

Laying the Foundation of Polyvagal Theory

Dr. Buczynski: Great. Even though we have *many* people on the call who were with us last time, I think we should start with just a little bit of foundation for the people who are new – and, by the way, many, many people on the Comment Board last time said that the webinar helped clarify so much.

Hopefully, we'll do the same this time as well as we get into a lot of new ideas to help clarify even more.

“The vagus is a cranial nerve that exits from the brainstem and goes to many organs in our body.”

For the listeners who might not be familiar with your work, let's do a recap, starting with what is the primary function of the vagus nerve in the brain and the body – maybe include where the vagus nerve is located.

Dr. Porges: The vagus is a cranial nerve that exits from the brainstem and goes to many, many organs in our body.

But the way of conceptualizing this in terms of either trauma or brain-body sciences is not to think of a nerve that is running in the periphery, but to think of a conduit, a cable that connects our body with our brain.

The vagus is really the largest nerve that travels throughout the body and about eighty percent of its fibers are sensory.

It is the portal to the brain from the periphery, and it tells our brain the state of our body.

The vagus also has a whole series of other fibers. Some of them are myelinated, which means they're very efficient in communicating; some are unmyelinated, and they regulate organs that are both above our diaphragm and below our diaphragm.

The vagus is this very critical nerve that deals with all or most of our primary internal organs and it communicates to our brain their status.

When you feel good, your vagus is telling your brain that it is in a good state; when you are not feeling good or you are feeling nauseous, it is conveying that information as well.

Dr. Buczynski: Why is your theory called *polyvagal* theory?

“The vagus is the largest nerve that travels throughout the body – eighty percent of its fibers are sensory.”

“The vagus is a critical nerve that deals with our primary internal organs and communicates to our brain their status.”

Dr. Porges: It is called polyvagal theory because there is an underlying principle here, and that is the principle of evolution in our phylogenetic history – where mammals come from.

Mammals came from reptiles and we have literally a family heritage of neural circuits, and those neural circuits, as they evolve, change and start doing different things.

With the mammal – and we are mammals – the polyvagal theory identifies a uniquely mammalian vagal pathway, and that vagal pathway is myelinated and goes to the heart and bronchi – the organs above the diaphragm.

But that is not the interesting part or the critical part of the theory; the critical part of the theory is that it is linked to the nerves that regulate the striated muscles of the face and head.

Facial expressions literally become a portal that tells you exactly how the vagus is influencing your heart and bronchi.

When people are stressed out, how do their faces look? The muscle tone gets flat, especially the neural tone to the orbital muscle called the orbicularis oculi, which gets flat.

All clinicians know that when people have flat affect, there is something to be concerned about.

“The window to our autonomic state is the face, and of concern to practitioners is a flat affect.”

The window to our autonomic state becomes our face. That is one of the primary principles of the polyvagal theory.

The other primary principle is that we functionally have three autonomic nervous systems or circuits that follow a phylogenetic or evolutionary history, and these circuits provide a response hierarchy.

When we're challenged, we use new circuits, and when they don't help us get into safe and appropriate situations, we regress – we use older and older circuits.

Our newest uniquely mammalian circuit is that face-heart connection, and we use this to literally convey to others that we're safe to come close to. When people convey to *us* that they are safe, *we* feel comfortable – social support has literally a polyvagal correlate.

However, when we're challenged, which can be due to normal life demands or threat, we can mobilize. To mobilize we need our parasympathetic nervous system and we have to turn off the vagus because the vagus is a calming circuit.

“When people convey to *us* that they are safe, we feel comfortable – social support has a polyvagal correlate.”

“To mobilize, we need our parasympathetic nervous system and we have to turn off the vagus.”

But fight/flight doesn't always work for us – and this is the whole story underlying trauma.

Trauma is normally associated with unsuccessful attempts to get away. When we *can't* get away, we *can't* use fight/flight; we resort to our most primitive neural circuit, and that, functionally, is a shutdown circuit.

That shutdown circuit is also vagal, but it's the old vagus; it's the vagus that we share with reptiles, like turtles. When this circuit goes, we just reduce our cardiac output and we reduce our mobilization.

Again, one of the critical things that we find when we talk to clients who have experienced trauma is this immobilization feature. Part of what I want to get into later this evening is how that's associated with dissociative states and hypoxia.

“Trauma is normally associated with unsuccessful attempts to get away.”

Dr. Buczynski: I'm taking notes here...what we just talked about, the three types of response are the social communicative, the mobilization and the immobilization – are all three of those largely autonomic?

Dr. Porges: When we use the word *autonomic* we're really using terms that were put into place in the early 1900s, so the new *mammalian* autonomic nervous system has a whole component of voluntary input.

“The new mammalian autonomic nervous system has a whole component of voluntary input.”

We can, in a sense, functionally change our breathing; we can change the motor tone to our face; we can control what is coming out of our mouth or going into it – and these can impact on autonomic state. Of course, we know this in terms of what we might call “coping strategies.”

Even the acoustic environment, what we listen to, can impact through neural regulation of our middle-ear muscles and can change our physiological state.

People have *always* known that – with chanting, with mothers' lullabies, with motherese (speaking), and even with normal engagement behaviors amongst friends – voice is important.

It's not simply autonomic meaning automatic – it's really a hybrid system that as we get more and more *mammalian*, we're using more and more voluntary or higher-brain structures to choreograph how our visceral systems work.

Again, I bring this back to the whole concept of social support. Social support is getting the system to *help* regulate our autonomic state.

It's not merely putting a person in our environment. It's not like you have social support like medicine – you have social support like a neural exercise.

“...we're using more higher-brain structures to choreograph how our visceral systems work.”

How Neuroception Works: Feeling Threatened or Feeling Safe

Dr. Buczynski: Let's talk a little bit more about neuroception. How does neuroception work when we feel threatened – or contrasting that with when we feel safe?

Dr. Porges: Our nervous system evolved to pick up certain features in the environment. It's really kind of an interesting story.

There are certain features, whether they're acoustic features or proximal features of gesture, our nervous system is doing an interpretation of these features.

Now, a lot of this interpretation is not on the level of cognitive awareness, so the word *perception* doesn't really fit well.

“Neuroception evaluates risk to negotiate, navigate, or trigger a neural component that fits the environmental context.”

So I coined the term when I called it *neuroception*, which basically said the nervous system is evaluating risk, and when it evaluates risk, it tries to negotiate, or navigate, or trigger a neural component that fits that environmental context or that risk factor.

If you hear or you're near a person who is engaging, smiling, articulating, and using prosody in voice– the intonation of voice – then suddenly you start feeling very comfortable.

You'll realize that background sounds disappear; you get interested, you get calm – and that's the social engagement system triggering through features of safety.

Now, if you engage a person and they speak with very short phrases and their voice is not prosodic – I'm going to try to mimic this as they start talking fast and use short phrases; it's choppy without prosody – and suddenly your nervous system reacts to that.

This is the neuroception – and you try to distance yourself, because they're now conveying cues to you about their body that they're not safe.

“If you engage a person and they speak with very short phrases and their voice is not prosodic, your nervous system reacts.”

There are a lot of men who have this problem – they talk loud with a low-frequency voice and most people just don't want to be near them, including their kids. The nervous system, through the process of neuroception, is making this interpretation – it's not cognitive...

Dr. Buczynski: Is neuroception the physiological part of our intuition?

Dr. Porges: It is a partial part of that. Neuroception is the physiological response. Then our nervous system evaluates that and we develop our personal narrative – we start describing or creating our own story.

“Neuroception is the physiological response.”

Our story has to fit, and sometimes, it's totally irrational – “I like this person/I don't like this person; this person treats me poorly/I don't like going to shopping malls...”

The person is trying to make logic – trying to take this chaotic reaction that doesn't seem to make any sense and trying to make it real or logical to them.

Dr. Buczynski: We get into that a lot when we're treating trauma and really when we're treating all kinds of conditions, and even in our interpersonal relationships...it's this whole concept of “making the story up to fit...”

“Our own story has to fit our neuroception even if it's totally irrational.”

Dr. Porges: Right. What we have to realize is that when people get triggered into either mobilization defenses or shutting down, they are going to develop elaborate narratives to make sense of what their body is doing.

“When people get triggered into either mobilization defenses or shutting down, they develop elaborate narratives to make sense of what their body is doing.”

Part of the critical theme here is that if people are aware that their body is reacting and coloring their perception of the world, that knowledge helps them revise their narrative – it informs their narrative.

Let's say that you have a stomach ache and you're in severe gastric distress – a lot of pain. How are you going to be with other people? Are you going to be supportive, engaging? Or are you going to be literally short and cranky?

The point is you know that if you have a stomach ache, you're not really going to be good for social events. But what if your nervous system is being triggered by *context* and you're unaware – it's not a gastric distention, but it's something else.

Suddenly you feel extraordinarily irritable. Do you want to blame others? Or do you want to try to navigate your complex world?

What I often like to say – and it's a metaphor – is when our nervous system fails us, we use behavior.

When our nervous system is detecting a neuroception of danger, risk or fear, maybe we're smart enough to navigate out of it as opposed to beating ourselves up and saying, “You have to stay in that environment.”

“When our nervous system fails, us we use behavior.”

Dr. Buczynski: When our nervous system fails us, we use behavior.

Dr. Porges: If we're smart and informed, we can navigate out. If our nervous system fails us, we "act it out."

In fact, that becomes the term – like with the child going into a temper tantrum, they "act it out." That is really when their nervous system of regulation has failed them and they now "act it out."

But a more mature person – at least we hope – is informed by an understanding of these systems, and can think and navigate and move the body into a less demanding situation.

How the Vagus Affects the Social Engagement System

Dr. Buczynski: So to summarize this, how does the vagus affect the social engagement system?

Dr. Porges: We have to separate the vagus into the two vagal pathways – one that is really a defense system and this is the part that has not been appropriately studied – let's use the term "in the last thirty to fifty years."

The notion of the vagus being a defense system is really partially written out in the literature. If we go back to the 1950s and earlier, we see people studying phenomena like sudden death and immobilization or freezing of animals when they don't move under shock and threat.

"The vagus system is hierarchical – the newer circuits are inhibitory over older circuits."

But post-1950 or post-1960, people thought of the vagus and the parasympathetic nervous system as their friend – in a sense the *savior*, the calming system.

But this vagus has really only been super-diaphragmatic, meaning above the diaphragm, regulating the heart and the bronchi – part of the lungs – that is linked to the facial muscles that become part of the social engagement system.

This vagus is the calming system – this is the system that helps down-regulate defensive behaviors and defensive physiological systems.

There is a critical point that I alluded to but skipped as I made the introduction: the vagus system is hierarchical, meaning that the newer circuits are inhibitory over older circuits.

Once we understand that, then the polyvagal theory becomes a profound window or portal to understanding clinical symptoms and devising interventional strategies.

Dr. Buczynski: Tell me more about that. Let's lay that out.

Dr. Porges: The hierarchy – and we're going to start with what every clinician and every insightful parent knows – is this: the social engagement features – meaning prosody, facial expressivity, gesture within a quiet, safe environment – provide opportunities to help soothe and calm them down.

"The social engagement features provide opportunities to help soothe and calm down."

“This uniquely vagal pathway, which was myelinated and linked to the face, came on board with mammals.”

The newest vagus circuit, this uniquely mammalian circuit, evolved with mammals and mammals are social; they can't survive as isolates, especially at birth.

Part of the phylogenetic evolutionary story is that this uniquely vagal pathway, which was myelinated and linked to the face, came on board with mammals.

But this system is not only on board with mammals. It has the wonderful capacity to downregulate what we often call our stress responses.

It downregulates sympathetic activity, adrenal activity – it's calming. Everyone realizes that and we basically use the social engagement system to calm ourselves down.

The social engagement system deserves to be described because it is this linkage between the control of the striated muscles in the face and head and the vagal regulation of the heart.

Once we start to articulate what those muscles do in the face and head, we start seeing all the strategies that people do to calm down.

One strategy is ingestion – not digestion – ingestion, which is the utilization of the muscles of ingestion of the face.

The other one, especially in the upper part of the face where the orbicularis oculi is located, is the social engagement for cues.

The third one really would be the muscles of the middle ear, where we listen to prosodic features and trigger the neural regulation of those middle-ear muscles. When we do that, we start to turn off our priorities for detecting low-frequency sounds which are predators.

“The social engagement system is the linkage between the control of the striated muscles in the face and head with the vagal regulation of the heart.”

Again, if you talk to trauma victims, they don't want to go into noisy places because the low-frequency sounds scare them or make them feel uncomfortable.

That's because the neural regulation of the striated muscles in the face and head got turned off. But they were turned off for a functional reason – if you turn them off, you become hypervigilant for a predator.

“When you deal with trauma victims, their nervous system is a neuroceptive state that has great advantages in detecting a predator, but is totally compromised in being social.”

Again, here's the important clinical information: when you deal with trauma victims and they start describing hypersensitivities to sounds and feeling vibrations that no one else seems to feel – not wanting to go into crowded places – they're telling you that their nervous system is tuned to detect a predator.

Their nervous system is a neuroceptive state that has great advantages in detecting a predator, but is totally compromised in being social.

That means the new mammalian social engagement system with the myelinated vagus is turned off, and when it's turned

off, what are you left with? You're left with underlying defensive strategies: either to fight or flee, or to disappear and shut down.

I use the term “the beauty” of this – at a metaphorical level – is once this new mammalian vagal circuit came on board through evolution, then the dynamics of the sympathetic and the old vagus became part of a health and growth system.

So we need our sympathetics to get our cardiovascular system working and our blood flow. We need to move – it's positive. But as long as we keep that social engagement system functioning, those other two older systems are in homeostatic balance.

“As long as we keep the social engagement system functioning, the two older systems are in homeostatic balance.”

The Vagal Paradox

Dr. Buczynski: You talk in your work about the vagal paradox. Tell us what you mean by that.

Dr. Porges: Here's the vagal paradox. If the vagal system which I am describing is so important and so positive, how can the vagus also kill you – meaning with clinical Bradycardias and hypoxia and shutting down?

“If the vagal system is so important and so positive, how can the vagus also kill you...?”

If we looked at preterm babies when they're at critical risk, what they're doing is having bradycardias – the heart rate is slowing *so much* that the baby is not getting enough oxygen to the brain.

The vagus is actually causing that just as the vagus, in healthy, full-term babies and healthy adults, facilitates our oxygenation and helps us feel calm. How can the vagus do both? It really doesn't do both – they're just different circuits in that vagal cable.

This really was what drove me into developing the polyvagal theory – how could a neural circuit that was *so* positive and helpful in supporting social behavior, health, growth and restoration also be the same neural circuit that caused immobilization, hypoxia and death?

It was through decoding – really going through and studying the comparative neural anatomy and how things changed with phylogeny – that it became clear that there was a *newer mammalian* circuit of the vagus that functioned in a very hierarchical way – that protected us from the “vagus of death” or vagal death.

How Vagal Nerves Relate to Trauma

Dr. Buczynski: We've been talking about polyvagal theory and I want to now move more into trauma. How are the vagal nerves involved with the psychological processes that lead to trauma?

Dr. Porges: When we start investigating trauma...we want to separate out the two kinds of trauma here: we want to talk about an event, a single traumatic event that changes a person's life, versus an accumulated series of traumatic events or abusive events.

“Polyvagal theory proposes that when an individual is in severe life threat and unable to utilize mobilization strategies or social engagement the neuroceptive features of that challenge may put a person in shutdown.”

Neurophysiologically and theoretically, it’s much easier to deal with a single event because the person has certain characteristics before that event, and then after the event the person is very, very different.

Polyvagal theory proposes that when an individual is in the situation of severe life threat and is unable to utilize mobilization strategies or social engagement strategies to get out of that, the neuroceptive features of that challenge may put a person in this very shutdown condition that is characterized by that old unmyelinated vagus.

Coupled with that would be reduced blood flow, especially blood flow to the brain, and then one might get dissociative features as well.

The issue is really not the horrendous experience of the trauma, but trying to make sense of the physiological response that that traumatic event triggered.

For many people who have been traumatized, the event is bad enough – but the consequences of that event on their physiology and on their nervous system is really what profoundly changes their ability to adapt in the world.

Dr. Buczynski: We’ve talked about the social engagement, the mobilization and the immobilization, but how do our bodies choose which system to use?

Dr. Porges: How do our bodies know? Once we use the word “choose,” we’re already getting into this whole idea that there is some option that we have.

“For many who have been traumatized, the event is bad enough – but the consequences on their physiology and nervous system can profoundly change their ability to adapt.”

The answer is: we have to realize that our body – our nervous system – is making decisions and it’s not allowing us to the table to argue our point.

An example of this I always like to use is my experience getting an MRI. On a psychological level, I was extraordinarily curious; my friends do research with MRIs, fMRIs, and I thought, “This is a really good opportunity.”

“Our nervous system makes decisions and does not allow us to argue our point.”

I went down – I had to go in to get this brain scan and this was for a clinical issue – and I got into the MRI, exactly up to my eyes, and I said, “Wait a moment. I need a glass of water.”

I took a glass of water and I went back in and they pushed me into the magnet. We got up to my nose, and I said, “I’m out of here.”

I had no idea that my body would respond with a panic attack from being in the enclosed space.

Now, people’s bodies respond in different ways, and sometimes they respond without them even anticipating it.

I had no idea that I had that type of vulnerability, and I felt that my nervous system totally failed me because I *wanted* to get this test done.

But for me to get this test done, I had to immobilize without fear, which is a very complex situation for the mammal.

That *is* the critical point of life – our ability to immobilize without fear in situations near other mammals – near other people.

I couldn't do that in the medical environment, and I was shocked.

I had no idea...and yes, the fact that my theory explained my behavior really did not make me feel that much better. I didn't really want to be the poster child for the polyvagal theory of explaining panic attacks.

“Our bodies respond in different ways, sometimes without even anticipating these responses.”

“To immobilize without fear is a very complex situation for the mammal.”

However, I did understand this, and again, the behavior that I used. So, in this case, I took medication to go in for the MRI. I didn't get angry at myself although I was angry initially.

I imagine a lot of people get those responses and I realized that this was a vulnerability, and I needed to, in a sense, use my “good brain” – my “smart brain” – and say, “How do I get this done without creating/compounding these feelings?”

The issue *is* our nervous system – we're not making voluntary decisions.

If you talk to clients who have been traumatized and they are extraordinarily defensive about creating relationships – they don't trust people – and you say to them, “You should trust people. You should go to places with other people,” how effective is that? It's not effective at all.

But if you tell them, “Your nervous system is functionally like a TSA agent at the airport and every person who comes close to you is literally going through one of these scans.

Every person, to your nervous system, is a potential terrorist. The way to get all potential terrorists off the plane or away from you is not to accept them.”

This is really the neuroception of people who have been traumatized – they don't want people to come close to them because their nervous system is making that evaluation.

Now, when you ask them on a cognitive level, they will probably say, “Look, I'd love to have good relationships. I'd love to be loved. I'd love to be able to hug, but my *body* is reacting this way.”

“If we inform people about the features of their body's responses, then the higher cortical areas can start inhibiting them at a natural level.”

If we inform people about the features of their body's response, which is literally these neuroception subcortical areas in our body reacting, then the higher cortical areas can interpret that and start inhibiting them at a natural level.

What I'm really saying is these defensive systems are at lower-brain structures – lower-brain levels.

“In a more calm and relaxed state, we can develop a narrative that may be helpful in modulating body reactions.”

When we get informed by what our body is doing without keeping ourselves in that mobilized, defensive state, but now in a more calm and relaxed state, we can develop a narrative that may be helpful in modulating those reactions.

Dr. Buczynski: Or use some of what we know with guided imagery, or breathing techniques or mindfulness or...

Dr. Porges: Yes – absolutely.

Dr. Buczynski: Then we’re downregulating...

Dr. Porges: Right. We’re utilizing these higher-brain structures, which follow a hierarchical rule also in the brain where newer circuits inhibit older ones.

It’s just like the polyvagal theory, which is saying newer circuits inhibit older ones in the neural regulation periphery – and likewise in the brain.

Dr. Buczynski: So that is a way of explaining...why some of our interventions work and what is happening when they’re working; the concept that newer circuits can inhibit...

“Newer circuits inhibit older ones in the neural regulation periphery – and likewise in the brain.”

Dr. Porges: If we think for a moment, we realize that if we pull back some of the newer parts of the brain, we disinhibit a defensive brain – a brain that evolved in other vertebrates to be defensive, to protect the organism.

It’s just this new mammalian cortex that takes those older structures and puts them under control.

Novel Events: Mammalian vs. Reptilian Response

Dr. Buczynski: Now, I’d like to talk about novel events.

You’ve said that there is a key difference between a mammalian and a reptilian response to novel events.

Mammals will direct their attention toward it and communicate about it, whereas with the reptilian response, not so much.

Dr. Porges: Let’s take this as a metaphor – mammalian organisms love novelty, but novelty within a safe environment.

Just think about puppies or kittens, or even rat pups – you watch them, and they’ll play; there’s a novelty, and there’s a movement that is away from the mother.

But also, if there’s something dangerous or fearful, they come back to social referencing – they come back to the mother.

It is paradoxical and dialectical as well.

It's like those who are bold and seek novelty are also those who have what I would say the most efficient pathway back to safety.

“Those who are bold and seek novelty are those who have the most efficient pathway back to safety.”

It's not that we think that people who seek novelty seek novelty just for the sake of “seeking novelty.”

In life, the people who are bold thinkers are willing to take gambles. They're not insecure in situations.

They're also people who have strong social support networks and don't feel that the gamble is really a life threat.

We can create environmental structures or social structures that mimic a mammalian idealized model versus mimicking a reptilian model.

A reptilian model is going to create isolation; it's not going to foster boldness.

A mammalian environment will be empowering of others, more of a shared environment, and have more empathy and care for others.

Dr. Buczynski: That makes a lot of sense to me, except in one kind of case, which would be a type of person who over-seeks novelty – craves or needs a constant danger.

“A mammalian environment will be empowering of others, and have more empathy and care.”

Dr. Porges: Yes, as I was articulating that, I was thinking about that as well – that one can create a model of more optimal behavior in many individuals, but we can see some of the features of those behaviors when we start describing sociopathic or some other forms of behavior.

The part that I would say is different or *may* be different is that the more healthy behavior involves others as well.

When one is seeking novelty in bungee-jumping, there is a difference between bungee-jumping with a friend – looking at their face while they're going down at the same time, or skydiving in the arms of another person – versus an isolate that is continually triggering their nervous system immobilization.

“Play recruits the aspects of defensive systems with social engagement: we mobilize and yet we don't hurt each other.”

Dr. Buczynski: So, that aside, I would say, in a way, your concept of those who are bold and seek novelty are the ones who have the most efficient path back to safety is a little bit like and sheds some light on some of what we know...about trauma and the path back...

Dr. Porges: If we think about trauma, it is that they do *not* seek novelty and they don't have a path to safety...

Let me shift the metaphor a bit to that of playing because I think the clues may come from play.

Play recruits the aspects of what might be viewed as defensive systems with social engagement systems: we mobilize and yet we don't hurt each other.

What we see as a unique theme that defines play in mammals is the need for face-to-face contact. They're presenting the cues – and if they're not maintaining face-to-face, they're using vocalization cues.

They convey to the other that the other is safe to be with. We see this with many, many species of mammals.

Now, when we don't play and we don't use the face-to-face, we hurt each other.

We see this on a playground where there are children that no one wants to play with – those are children who have state-regulation disorders. They mobilize; they hurt others. They don't *want* to hurt others – they're just *unaware* of the degree of engagement.

The route back may be through aspects of play, which would enable mobilization.

Then the regulation of the mobilization, since it's a hierarchical system, would enable the social engagement system.

In terms of the definition of play – people used to think of play as either exercising fight/flight skills, and we see this if you watch small mammals.

If you recast that and say they're not doing anything regarding hunting or fighting – what they're doing is developing state-regulation skills – they're creating a neural exercise that enables them to immobilize without fear near another later.

“Our culture confuses exercise with play.”

If you watch kittens and puppies, they're always making face-to-face when they're playing, and then they're safe with that litter mate to sleep with. It's not dangerous...they're using the face to cap this mobilization.

Our culture confuses play with electronic games, which are not mobilization, and it confuses exercise with play. Exercise is primarily without face-to-face, mimicking fight/flight.

Dr. Buczynski: If vagal tone is responsible for regulating the body during intense periods of stress, is it possible that the vagus could actually harm the body, especially during a traumatic experience or disruptive event?

Dr. Porges: “Harm” is a complicated construct.

Again, one of the features that I try to embed within the polyvagal theory is there is no such thing as good or bad – these are adaptive responses.

Then we have to figure out whether those adaptive responses fit the context or don't fit the context – and this takes a lot of what I call the “moral veneer” away from some of these responses.

A lot of people think that their nervous system is no longer social after trauma, that they're bad – something is wrong with them – as opposed to clearly understanding the adaptive strategies, the miraculous adaptive strategies, that their body has implemented.

“If you watch kittens and puppies they're using the face to cap mobilization.”

“We have to figure out whether adaptive responses fit or don't fit the context.”

The issue of the vagus “hurting” is interesting because the vagus sub-diaphragmatically can create difficulties with digestive processings; it can do a lot of things that end up as clinical symptoms and bring people into the internist for treatments.

“If you start looking at the clinical symptomatology of people with trauma histories, we see a lot of sub-diaphragmatic issues.”

Our target audience can be greatly affected by this older vagus – if you start looking at the clinical symptomatology of people with trauma histories, we see a lot of sub-diaphragmatic issues, whether it’s obesity or digestive issues or other types of neurophysiological problems.

Dr. Buczynski: Let’s go through that again. Exactly how are you saying that the vagus might be involved?

Dr. Porges: The point that was missing was that this old, unmyelinated vagus can be utilized as a defensive system.

Now, you can understand that in terms of the immobilization behavior – passing out, dissociating – but what you might *not* have thought about is that the vagus nerve is surging – it creates, for instance, bowel problems and it creates problems with the gut.

It creates a whole set of neurophysiological health problems that can impact on general health.

Let me put it this way: the neural regulation of that old sub-diaphragmatic vagus could be greatly involved in a lot of the symptoms, like irritable bowel syndrome and others, or obesity – the gut issues.

If we go back to the 1950s, when people had certain types of gastric problems, they used to do vagotomies – they used to cut the vagus to the stomach.

That was the medical solution – if the vagus was reacting in this hyper-responsive way – just cut it. They don’t do that anymore.

Dr. Buczynski: When they would cut it, what was the result for the person...What was the collateral effect of that?

Dr. Porges: The collateral effect was that the surgery really wasn’t that effective in terms of taking care of the clinical symptoms and no one, as far as I know, ever studied the feedback to the personality or the psychological regulation of cutting that nerve.

It’s not really the motor components you’re cutting – you’re also cutting the sensory components of the branch.

But remember, in a medical model, the model is, “I have a target organ. That target organ is dysfunctional – fix that target organ. If that target organ is over-responsive, block the neural influence on that target organ. Do that with medication.”

But previously they thought about doing it with surgery.

Now, a more enlightened strategy would be to understand the neural feedback of these systems and to see the responses that they’re having on adaptive function.

“A more enlightened strategy would be to understand the neural feedback and to see if their responses have adaptive function.”

Dr. Buczynski: Sure. That has been the other side to the way you think about health and disease – the functional side to how you think about health and disease.

While drugs might be somewhat more enlightened than cutting the vagal nerve, the real way to think about it, as you said, is what the function is here, and what is going on...

Dr. Porges: Yes. After describing my event in the MRI, I understand that the acute use of drugs may have a very, very important role in enabling people to experience something with a system that's bothering them or being downregulated.

“The way we often compensate is to withdraw some of the vagal influence.”

Dr. Buczynski: But that's in a situation where you only have to have an MRI once every so often. If you were talking about going on an elevator and you worked on the twenty-fifth floor and every day you had to medicate to go to work...

Dr. Porges: You're describing a portion of our society. There are people taking beta blockers to deal with anxiety issues, public speaking, or elevator riding.

They are doing that without thinking about the *taking away* of a component of the nervous system that is part of our adaptive function.

Once we block with beta blockers, we're blocking the beta-sympathetics. How are we compensating with that?

The way we often compensate is to withdraw some of the vagal influence. In a sense, the compensation is to take *away* something.

The Vagus and Dissociative Styles

Dr. Buczynski: You had said earlier that you wanted us to get into dissociative styles – the vagus and dissociative styles. Let's go ahead and do that.

Dr. Porges: This is really quite new to me and we're all students, trying to explore new areas and trying to understand issues.

I hadn't realized how prevalent dissociative states were in people and what is going on there, especially in those who are traumatized.

I'm starting to conceptualize this on multiple levels. At one level is the initial trigger of the initial dissociation, and trying to link this to older adaptive reactions – basically it's a very reptilian old-vagal circuit that is shutting down.

When you shut down, you basically slow up the heart. What happens to mammals when you do that? It reduces the blood flow and the oxygenation of blood to the brain.

What happens to our cognitive function when that occurs? It changes.

Now, the question is, after this traumatic triggering event of trauma, what is the residual state of our nervous system? Where is it? What does it do?

“Dissociative states are so prevalent in those who are traumatized.”

“Historically, we have used behavioral models for the treatment of trauma... We haven’t thought about a one-trial conditioning model.”

Does it use that dissociative state more frequently – is there a threshold change in getting to it?

Then, of course, the real question is: How do we get *out* of it? This is the question begging to be answered.

I think the models that we’ve used have been extraordinarily limited. Historically, the models that we use for treatment with trauma have been behavioral

models – desensitization models, visualization, cognitive behavioral therapy models.

But what we haven’t used or thought about is a model that is very similar to taste aversion – a one-trial conditioning model in which something gets associated and triggers us and puts us into a physiological state.

We have to think that taste aversion is also that sub-diaphragmatic vagus – it’s that old reptilian vagus and not the mammalian.

Taste aversion is a reaction that has adaptive features for poisoning or other issues; just as immobilization and dissociation have adaptive features when one is being abused or hurt.

What I’m trying to figure out now, and maybe the next time we talk, I’ll start by reintroducing strategies that were discussed in the 1930s and 1940s about the concept of a single-trial learning model, but linking the single-trial learning *only* through sub-diaphragmatic vagal processes.

“Based on single-trial learning and taste aversion, we might have some clues about moving from the deficits of trauma to a more adaptive social behavior.”

The question then is: in the literature with animals where they did single-trial learning and taste aversion, how did they reverse them? That is really where I want to go and I’m not there yet.

From that literature, I think we might have some clues about how to move people from some of the deficits of trauma to a more adaptive social behavior.

The clues are really going to be embedded in an understanding that many of the features of trauma are linked to that sub-diaphragmatic vagus adaptively reacting.

Dr. Buczynski: Stephen, how did you get into thinking about that? How did you get into that direction?

“Many features of trauma are linked to the sub-diaphragmatic vagus adaptively reacting.”

Dr. Porges: The features are all about immobilization and I think it’s just like the vagal paradox. It’s about using certain words – whether we use the “vagus” or we use “behavior,” if we don’t deconstruct it, we’re really limited in what we can do.

But when we start to deconstruct these processes, we start seeing that they’re more than one.

So, let’s think about certain types of learning. Those of us who went to graduate school in the late sixties dealt with the expectation that the

theoretical models for psychology would be behavioral models and that one would gain control over the body, the viscera, through those same models that were used for operative behavior of fingers and hands and limbs.

We have to go back and think that people were making a grave mistake because they were treating the neural regulation of visceral organs as if they were following the same rules that conscious operative behavior was.

Once they started to realize that they were different, what they really did was leave the control of the visceral organs alone; they just ran away from them.

When you have this big discipline of biofeedback and often trying to improve the neural regulation or the health of the individual with the heart or other organs, no longer did people think that they were directly influencing those neural pathways. They were not even *talking* that way.

In the early work on biofeedback and operant conditioning of physiological activity, they were trying to explain how you control those systems without the involvement of skeletal muscle.

If you use muscles, it can trigger in them an autonomic state, and that was the big argument in the early 1970s. Can you control the heart without skeletal muscle control?

Can you have the brain directly control the heart through a learning paradigm? They basically couldn't do it – it couldn't be replicated.

What was lost was a quest to understand the laws of learning of our viscera.

I think this becomes very critical, especially when we get into trauma and any type of physiological consequence of a single event.

“We need to clarify the diagnosis, and *not* base it on the events but on the initial reactions.”

That is the profound lesson of trauma, and it gets clouded when we start talking about PTSD and using clinical diagnoses, which have literally a checklist of features.

Some of the features or some of the people who get that diagnosis never had that shutdown response while others have.

That means that some of their reactions are highly mobilized, defensive, highly anxious reactive behaviors – while other reactions are totally immobilized.

I think we need to start to understand the reactions – to clarify the diagnosis, *not* based on the events but based on the initial reactions.

Dr. Buczynski: All right...if we clarify, based on the initial reactions rather than on the event, get us down there – what might that look like?

Dr. Porges: From my perspective, I'd like to look at a subcategory – immobilized and dissociated or passed out and “someplace else” in response to the trauma – versus others.

“Neural regulation of visceral organs follow different rules...”

Dr. Buczynski: You talked about a single-treatment approach.

Dr. Porges: Yes, that would be a single event that triggered trauma versus an accumulation of numerous events creating it.

The single-event provides this. When we start looking at individuals, we have to be careful about getting *very* detailed clinical histories.

We need to get the individual to describe their response more than describing the event.

If we get more information about – where they *went* – whether they passed out, whether they dissociated, whether they fantasized – what happened then and after that – that’s the critical point.

Then, we can start working on an intervention model that treats very similar to what we were talking about with trial learning and taste aversion – a model that develops strategies to trigger the nervous system out of it.

Now, my own strategy, or the initial one – and it may not be right – is as long as you have features to the social engagement system on board through the use of modulated prosodic voice or safe environments, then you might be able to discuss or get the person out of that state.

“Our social engagement system – face, voice, and prosodic features – enables us to change our physiological state.”

Our social engagement system with the myelinated vagus – our face, our voice, our ability to utilize prosodic features – enables us to change our physiological state.

If we can change the physiological state to be incompatible with shutting down, then I think we can move the person out of it.

The most successful trauma therapists are those that enable their clients to negotiate and navigate in a state of safety.

You’ve had Pat Ogden on, and Pat is really a master of this – she understands the importance of safety in the client and the empowerment of the client to navigate safety.

Dr. Buczynski: She is referring to it as the window of tolerance.

Dr. Porges: Yes. The window of tolerance to Pat is keeping that person within that autonomic state in which social engagement still works.

By navigating or negotiating with the client’s safety, the person is no longer or not pushing on their defensive systems to shut down or to mobilize.

She is doing a neural exercise to expand the homeostatic function of state regulation.

“We need to get the individual to describe their response rather than describing the trauma event.”

“The most successful trauma therapists enable clients to negotiate and navigate in a state of safety.”

Single-State Learning

Dr. Buczynski: When you talk about single-state learning, tell us more about how that looks.

Dr. Porges: Single-trial learning, the metaphor of the model, was taste aversion. In that model, many people got radiation treatments, they ate food, and then they could never eat those foods again because they got sick after the radiation.

The question now is what are the strategies that scientists have used to get people *out* of those reactions?

“What are the strategies scientists have used to get people *out* of single-trial reactions?”

I would basically say that in the single-trial trauma reaction of shutting down, the person is normal or typical before this event and after the event the person can't go to public places, starts having all the symptoms of lower-gut issues, can't deal with proximity with others, is hypersensitive to low-frequency sounds and even has severe issues of fibromyalgia and blood-pressure regulation.

“When the old vagus is used as a defense system, it is functionally a single-trial learning case.”

Those people create a subset that provides us with a window, because their symptoms can be organized as symptoms of this old unmyelinated vagus – not really being dysregulated, but having overshoot – they were used as a defense system.

Here's the issue: when that old vagus is used as a defense system, it is functionally a single-trial learning case. Once it is used, the neural regulation is different afterwards, and that is really very similar to the taste aversion model.

That type of information, hopefully, will provide sufficient insights to try to decouple the mechanisms of this immobilization reaction to trauma.

Dr. Buczynski: I think we're going to need to stop there, but I just want to tell you how *fascinating* all of this is. I love the way you're moving, even as we speak from one month to the next, in another direction, and I'll be picking up on it as the journey is in process.

Dr. Porges: It is really quite a journey – and this is what life is about. I mentioned the notion of boldness and good social relationships – you don't go places with your mind unless you have a good place to go with your body.

“You don't go places with your mind unless you have a good place to go with your body.”

“The world we live in fosters so much cognitive functioning without the integration of our cognition with our bodily experience.”

I'm focusing on these issues, and I'm glad you're picking up on them.

I'm really interested in the fact that the world we live in fosters so much cognitive functioning without the integration of our cognition with our bodily experience, and that dissociation is probably occupying a high percentage or a significant percentage of everyone's lives.

It is a product of a lack of integration – and this is the part I’m also getting very interested in – the communication between left and right hemispheres.

This is really Iain McGilchrist’s work – it’s quite amazing and interesting – the fact that as we mature, we spend more and more time in a sedentary position working on our cognitions and not on the neural regulation of our visceral state.

Even our educational system is so poised to get people into that mode so early that they never even have the substrate of having a good biobehavioral state regulation system working.

Dr. Buczynski: We’ll have to leave it there.

Let me say to everyone that is on the call, we’ll pass it to you now – go to the Comment Board and tell us how *you* see yourself using these ideas.

I know I say that every time, but we have some really different and new ideas here, and maybe *you* have some insights on putting some of these pieces together and it will be fascinating to watch.

Meanwhile, Stephen, I can’t wait to talk to you again. Thanks for being part of this series and for all of the ways that you are so actively involved in seeking to find answers to many of the troubling conditions that we’re all treating. So thank you very much.

Dr. Porges: Thank you, Ruth. Thank you very much for inviting me.

Dr. Buczynski: Take good care now.

“As we mature, we spend more and more time in a sedentary position, working on our cognitions and not on the neural regulation of our visceral state.”

TalkBack Segment with Joan Borysenko, PhD and Ron Siegel, PsyD

Dr. Buczynski: That was quite a call. I always love talking to Stephen – he’s always thinking so imaginatively and creatively and brilliantly.

The Big Takeaways

Let’s start with you, Ron – what struck you about what he said?

Dr. Siegel: For most of us who are mental health professionals, we don’t spend a lot of time thinking about cranial nerves.

It is just fascinating to see how, by looking at this very basic part of our nervous system and this part of our nervous system that has such deep evolutionary routes – as he explained the reptilian branch that has been around for a very long time and the somewhat more modern mammalian branch – our understanding of this part of the nervous system really makes sense out of what we see when treating trauma.

“Our understanding of the nervous system can make sense of what we see when treating trauma.”

It makes sense, basically, out of the two seemingly opposite, unrelated results that happen in human beings when they have been traumatized.

On the one hand, we see all of this hyperarousal – all of the ways in which people can’t calm down, can’t sleep, have constantly intrusive thoughts, and can’t focus their attention.

“There are two ways that mammals have learned to deal with horrible threats.”

And yet, on the other hand, we see this numbing, tuning out, and sluggishness that can happen in people.

It’s fascinating to have a simple neurological model for this that basically says: there are two ways that mammals or other organisms have learned to deal with horrible threats.

The first one is to lie there like a lump and hope the threat will go away, which is basically what reptiles learn to do.

The second way is to mobilize all of your resources, think the best you can, and get the heck out of there, which is what mammals learn to do.

That these two coexist in us – with one that predominates and then sometimes the other – is fascinating.

The other piece that is so critical to us in treating trauma is the role of social contact in the mammalian part of the branch – this idea that our arousal is regulated by our participation in the social group, with the other organisms of our kind is *so* powerful.

“...critical to us in treating trauma is the role of social contact.”

It speaks so directly to what Ruth Lanius was talking about – the importance of attachment relationships both for allowing flexibility

and resilience when difficult things happen, as well as obviously in therapeutic relationships, for healing trauma.

Dr. Buczynski: Thanks. How about you, Joan – what struck you?

“The evolutionary hierarchy goes from reptilian to fight/flight and then to social engagement.”

Dr. Borysenko: Two ideas really struck me. First of all, just as Ron was talking about, is the interesting evolutionary hierarchy, which starts at the reptilian, goes to the fight/flight, and then goes to the social engagement.

Having a framework is very important, both for therapists and for clients, to understand what is happening.

Many years ago, when I first got into the field of mind-body medicine, I was working with Herbert Benson. He was fascinated by “voodoo death,” and that is the kind of vagal death that Porges was talking about.

Another person who talked about that was Viktor Frankl – how people can actually die – they go into bradycardia and their heart rate gets so slow that they can’t oxygenate their systems when they give up hope.

That is a fascinating underpinning of what it takes, as a therapist, to give a person hope so that they don’t go into that system where they become helpless.

“The nervous system response to trauma is like the response that happens in one-trial learning.”

In fact, that’s where Martin Seligman started many, many years ago. He had a fantastic book on helplessness and depression and how to work with that, and it ties directly to what Porges was saying.

Second, what caught my attention was his thinking about one-trial learning. Just look at taste aversion. I used to be, at a time in my life, the queen of operant conditioning: give me a pigeon, give me a rat, give me a cat – I could teach it all kinds of things. (If only now I could just housetrain my dogs...)

But in any case, things like taste aversion were very interesting to us in that context, just as they are interesting to Stephen.

What happens in the nervous system when you have a one-trial learning based on survival is what happens in trauma.

You have one-trial learning in an acute trauma that changes your physiology. Could we use some technique? Who recovers from taste aversion and how does that happen? This is the question he asked.

I was thinking I should use myself as the laboratory. I was up half the night thinking about this!

For example, and I’ll be quick about this, when I was in camp one summer, I had a counselor who wanted me to eat a tuna fish sandwich.

I did not have a lot of interest in different kinds of food because I had Celiac disease and could only eat a few different foods as a child, and mayonnaise was not on my list. She made me eat it; it was the first time I had tasted it and it was disgusting to me – so I threw it up.

That is the basis of taste aversion, and it is the basis of many traumatic events.

You have something that happens to you, it makes your physiology deeply uncomfortable, and every time we even think about going back there, you get nauseous – I get nauseous being in a room where someone is eating a tuna fish sandwich.

I started to think about how would you go about reversing that one-trial learning?

I have never heard anybody think of that or speak of it in reference to trauma, but Stephen kept coming back to that – and I find that fascinating as a theory to work on.

Can Patients Become Immobilized During Treatment?

Dr. Buczynski: Moving on, according to Stephen, trauma happens when our fight/flight mechanism fails and we become immobilized. Do we need to worry about clients becoming immobilized *during* treatment?

Dr. Siegel: That’s a great question. Of the two poles of trauma – the hyperarousal and the hypoarousal – we generally pay much more attention to hyperarousal in the field.

What can we do to help people calm down? What can we do to help people regulate their emotions so that they’re not too reactive or they don’t have all sorts of psychophysiological arousal symptoms?

But the opposite happens as well. Sometimes it happens in treatment and we don’t even notice it.

When a therapist gives an interpretation to a patient and says, “Oh, I wonder if this is happening/that is happening,” and there is some validity to it so this or that *is* happening.

Suddenly, the patient may start to space out. They may start to shut down – in essence, they may start to “leave the room.”

“It’s not helpful to the patient if we’re too enamored of our interpretation or too interested in how right we are.”

We may not get it if we’re too enamored of our interpretation and we’re interested in how right we are about what is going on.

I can think of one patient I have worked with for a long time who has a lot of trouble with this.

She has trouble with both sides of the continuum. She will have difficulty with hyperarousal, but she has had an interesting symptom in which she would have seizures.

They weren’t really epileptic seizures, but were rather a kind of thinking spell. It would happen whenever she was in a circumstance in which either she was afraid of having a fainting spell, so it had that aspect to it, or where somebody was being aggressive toward her – that was right out of the reptilian playbook.

Somebody would be aggressive; she would “play dead” – and not consciously at all – it would just completely overcome her in this way.

“Of the two poles of trauma, we generally pay more attention to hyperarousal.”

“People get immobilized and become easy prey.”

With people for whom this happens, they *do* tend to get immobilized – they tend to have a lot of “deer in the headlights” experiences. If they’re with another person who acts in ways that are perceived as threatening, they will freeze.

She would observe and say, “Why does it always happen to me? It’s like I’m a magnet for abusive people; I’m a magnet for dominating and sadistic people.”

Because of the “deer in the headlights” phenomenon, the immobilization that happens makes her seem like an easy mark.

It’s like this: if you’re a predator, you don’t care if the lizard is lying still or not. If it’s a tasty lizard, you’re going to go for it!

I think that happens in interpersonal life – people get immobilized because of this part of the vagal nerve response and become easy prey.

“Immobilization is a hardwired reaction, not a personal fault.”

Sometimes we think, “Why does this person keep choosing abusive relationships?”

But it’s not their fault – it is a hardwired reaction in which they tend not to fight back. They tend to become immobilized – whether to the point of fainting or just to the point of getting stuck and paralyzed.

Dr. Buczynski: Thank you.

How Tone of Voice Can Improve Therapy

Joan, if our tone of voice is *part* of the vagal system, how can we, as therapists, use that knowledge to improve our treatment?

Dr. Borysenko: Tone of voice is very interesting. I want to tell two very brief anecdotes and see how this relates to treatment.

At one point, I was an assistant professor at Tufts Medical School in Boston, and part of my job was to be the course director for dental histology in the dental school – it is the study of cells, tissues, organs, functions – all of that.

I was young, and I wanted to get a lot of information in quickly. Students came up to me and said, “Can you please slow down? You talk so quickly that we get anxious. We’re afraid that we won’t be able to learn all the information.”

“Voice itself can make people anxious.”

Now, I realize that the underlying fear is that my voice itself was making them anxious – how fast it was. But the fact was at that point in my life, I didn’t know how to modulate my voice – it was a monotone, and I only learned that through feedback.

One day, my brother, who is ten years older, just asked me – “Have you ever wondered why your voice is such a monotone?”

That actually shocked me. Mostly we don’t hear or notice our own voice; I didn’t know mine was a monotone.

Suddenly, it came to me: somebody who talks really, really fast and in a monotone voice can be quite anxiety-provoking as a person. That was shocking to me.

I am a really good mimic, and so as soon as I knew what I was doing, I started to learn to modulate my voice so that it became more musical – there were more intervals.

Sometimes we need acting lessons or voice lessons! This came up to me *again*.

“Tone of voice is a set-up for transference.”

I had ...a physician at one time who talked like that: very, very quickly – *so* quickly – and without intonation. Every time I saw her, not only did I get anxious, but I felt as if she was so uncomfortable – what could I do to make her more comfortable?” My caretaking instincts came in!

“Do you modulate your voice? Do you stop for emphasis? Prosody makes a big difference.”

Tone of voice is a set-up in some way for transference. A client sees his/her therapist and that therapist looks anxious or looks uninteresting. If their voice is in a monotone, that’s going to have an effect.

What I suggest to people is to make a recording of a session – certainly many people do – and see what your prosody is like.

Do you talk in a monotone? Do you modulate your voice? Do you stop for emphasis? All of those kinds of things make a very big difference.

What I hear now from people is that there is something about the way I talk which is inherently calming. So I want people to know it wasn’t always so – and that is a learned skill.

Dr. Buczynski: Thanks.

How to Share the Vagus System with Patients

I guess I would like to ask both of you the following question: can describing the vagus system and how it works help clients to feel better about their symptoms?

I know Stephen had one example of this and I’d like to get both of your thoughts. Ron – have you ever done that? Would you do that? What do you think?

Dr. Siegel: Yes, absolutely – and all the more for having just listened to Stephen talk in the Brain Series and on other occasions – but all the more for having just heard it now.

We talked before about the kind of shame that people carry with them when they’ve been traumatized – they feel so terrible about their symptoms.

So, not only do they have to suffer from their hyperarousal or hypoarousal and not only do they have to suffer from the various intrusive thoughts that happen and all the psychophysiological disorders, but they also suffer from this terrible feeling that, “It’s my fault – there’s something wrong with me. I should be able to act like other people.”

Anything we can do to help people rejoin the human family is important.

Our therapy needs to help them feel that their experience is simply the natural unfolding of forces and factors. It's all quite impersonal.

It's not about them being bad – or good for that matter – it's simply what we would expect to occur to an organism at this point in evolutionary history – to one who has had this environmental experience. That is enormously relieving to people.

So, for example, with the patient that I was talking about a few moments ago who would literally have these seizures, I have never talked to her about them in terms of polyvagal theory.

I had talked about these seizures in terms of being a natural response to fear, but articulating that with the mechanism of the polyvagal theory, the vagal nerve, and our reptilian/mammalian responses would be even more helpful to her.

“Articulating the mechanism of the polyvagal theory, the vagal nerve, and our reptilian/mammalian responses would be helpful to her.”

That will give her an even better map – because she suffers so from both sides of the continuum: she has a great deal of difficulty sleeping, she worries terribly about hyperarousal under many, many different circumstances, and she has these freeze experiences as well as these experiences of “spacing out” and dissociation.

Just by describing this in terms of being very old neural circuits could be very helpful to her. I haven't done it yet, but it is my intent to do so now.

Dr. Buczynski: How about you, Joan?

Dr. Borysenko: I agree entirely with you, Ron. One of the main issues, indeed, is that people feel ashamed of who they are.

Give them a framework that essentially says: “What else would you expect? This is simply what happens, physiologically, to somebody who has had the same experience.” This takes the whole overlay of shame away.

It gives people a sense of safety, and a sense of being understood. We all want to be seen and understood – that is so basic in terms of keeping an environment safe.

I have always been a great fan of psychoeducation for this very reason. We want to use whatever framework we have so that people feel normal within that framework, and have that as the starting point.

In fact, the way that I usually work with people or work with groups is to have some sort of a presentation – it might be just spoken or at times a PowerPoint – but I say, “I'm treating you just the same way I would treat a colleague.

“Anything we can do to help people rejoin the human family is important.”

“Give them a framework that says: ‘What else would you expect?’ Give people a sense of safety and a sense of being understood.”

We all need information. So, here is what we know about the particular set of circumstances that you face – what the physiology of that is.” I just tell them.

“People are so happy to be treated in a collegial way.”

People are so happy to be treated in that particular way – not just understood but actually treated in a collegial way.

I’ll add to that by saying, “Now we both have the same understanding and we can work together within this understanding to help you shift your physiology and your behavior and your view of life.”

Teamwork and the fact that, “We’re all in this together,” is a really important part of Stephen Porges’s therapy. That is the social engagement part.

Presenting a framework like this brings people into the top of their vagal hierarchy. Maybe if we start from there, that can be a great starting point.

Dr. Buczynski: Now to everyone on the call – we want to hear what *you* thought about the call tonight and how *you* are going to use what you heard.

“Teamwork and the fact that, ‘We’re all in this together,’ is the social engagement part.”

So please go to the Comment Board and tell us your first and last name, your city and state, your profession, and tell us how *you* are going to implement the ideas you heard tonight.

“Presenting a framework brings people to the top of their vagal hierarchy.”

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We’re grateful for your support to do that.

Next week we’ll be talking with Pat Ogden – and, as you know, when we talk with Pat Ogden, we also go very much into the body and why the body just *can’t* be ignored when we’re treating trauma. We will get much more specific; I think it may affect how you assess symptoms – you won’t want to miss it.

Take care – I’ll see you next week.

About The Speaker:



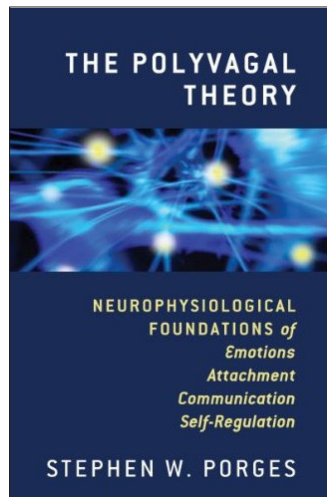
Stephen Porges, PhD, is a Professor in the Department of Psychiatry and the Director of the Brain-Body Center in the College of Medicine at the University of Illinois in Chicago. He is a neuroscientist with particular interests in understanding the neurobiology of social behavior.

In 1994, he proposed the Polyvagal Theory, a theory that links the evolution of the autonomic nervous system to the emergence of social behavior.

He has served as Chair of the Department of Human Development and was recipient of a National Institute of Mental Health Research Scientist Development Award. He has also authored the book *The Polyvagal Theory*.

Featured Books by Speaker: Stephen Porges, PhD

*The Polyvagal Theory:
Neurophysiological Foundations
of Emotions, Attachment,
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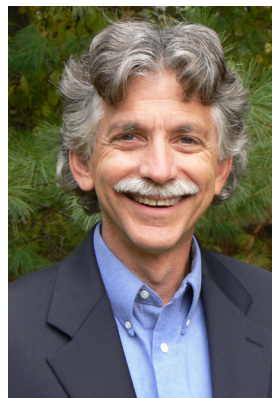
Since 1989, Ruth has combined her commitment to mind/body medicine with a savvy business model. As president of *The National Institute for the Clinical Application for Behavioral Medicine*, she's been a leader in bringing innovative training and professional development programs to thousands of health and mental health care practitioners throughout the world.

Ruth has successfully sponsored distance-learning programs, teleseminars, and annual conferences for over 20 years. Now she's expanded into the "cloud," where she's developed intelligent and thoughtfully researched webinars that continue to grow exponentially.



Joan Z. Borysenko, PhD, has been described as a respected scientist, gifted therapist, and unabashed mystic. Trained at Harvard Medical School, she was an instructor in medicine until 1988.

Currently the President of Mind/Body Health Sciences, Inc., she is an internationally known speaker and consultant in women's health and spirituality, integrative medicine and the mind/body connection. Joan also has a regular 2 to 3 page column she writes in *Prevention* every month. She is the author of nine books, including New York Times bestsellers.



Ronald D. Siegel, PsyD is an Assistant Clinical Professor of Psychology at Harvard Medical School, where he has taught for over 20 years. He is a long time student of mindfulness meditation and serves on the Board of Directors and faculty of the Institute for Meditation and Psychotherapy.

Dr. Siegel teaches nationally about mindfulness and psychotherapy and mind/body treatment, while maintaining a private clinical practice in Lincoln, Massachusetts. He is co-editor of *Mindfulness and Psychotherapy* and co-author of *Back Sense: A Revolutionary Approach to Halting the Cycle of Chronic Back Pain*.