Frontiers in the Treatment of Trauma

Why the Vagal System Holds the Key to the Treatment of Trauma

a TalkBack Session with
Joan Borysenko, PhD; Ron Siegel, PsyD; and Ruth Buczynski, PhD
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**What Stood Out Most**

**Dr. Buczynski:** 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.

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.

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.

> “There are two ways that mammals 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.

It speaks so directly to what Ruth Lanius was talking about when she talked 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?

**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.

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 had not 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 Bessel 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.

“"We may not get it if we’re too enamored of our interpretation and we’re interested in how right we are.””

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

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.

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.”

“"If they’re with another person who acts in ways that are perceived as threatening, they will freeze.””

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

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.

How Tone of Voice Can Improve Therapy

Dr. Buczynski: 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.”

“My voice itself was making them 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 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.

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!

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 because 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.

**How to Share the Vagus System with Patients**

**Dr. Buczynski:** I guess I would like to ask both of you the following question: can describing the vagus system and how it works actually help clients 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 badly 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, 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.

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.”

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. 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 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.
About the speakers . . .

**Joan 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.

**Ron 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 mediation and serves on the Board of Directors and faculty for the Institute for Medication and Therapy.

Dr. Siegel teaches nationally about mindfulness and psychotherapy and mind/body treatment, while maintaining a private practice in Lincoln, MA. 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.*