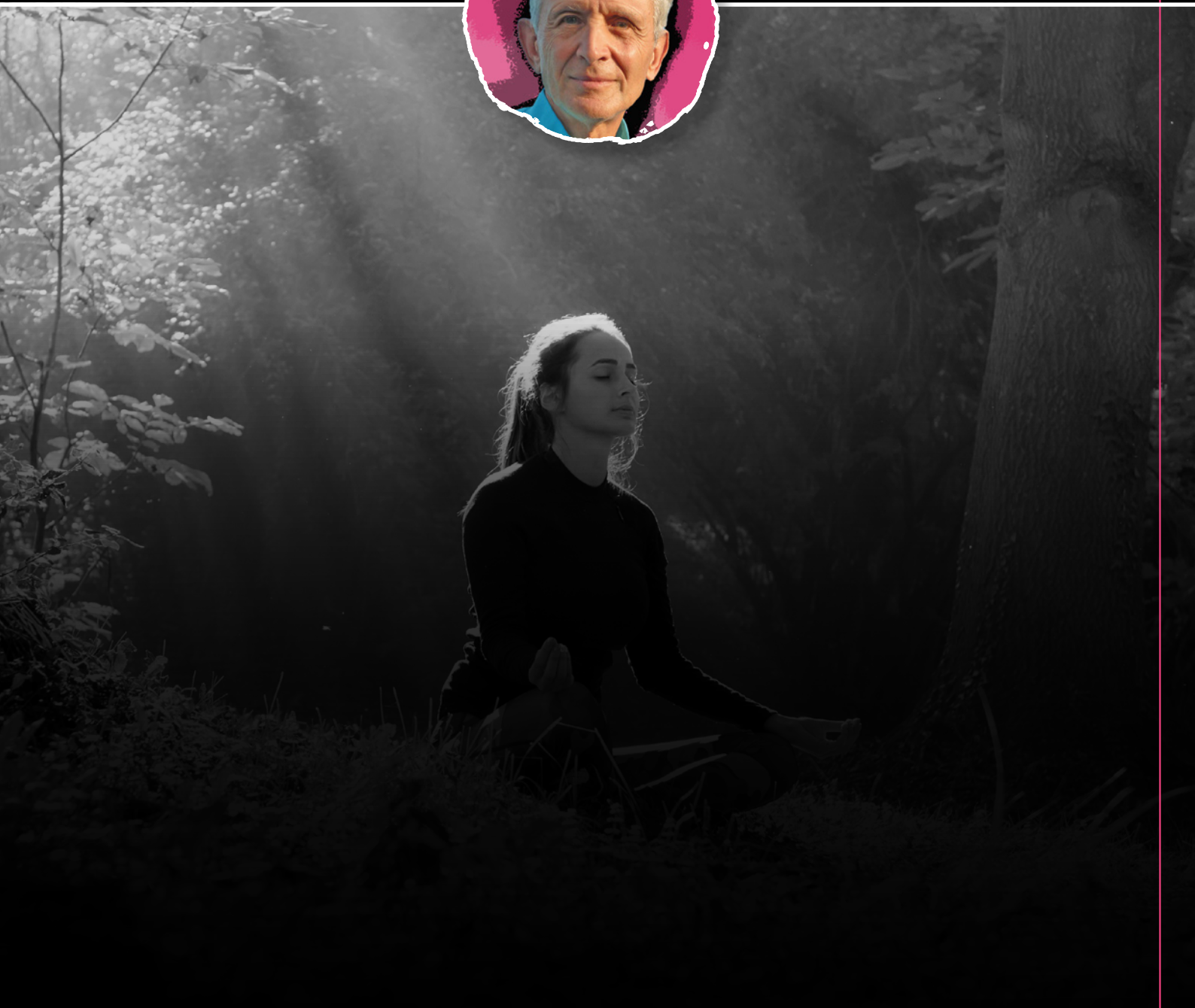
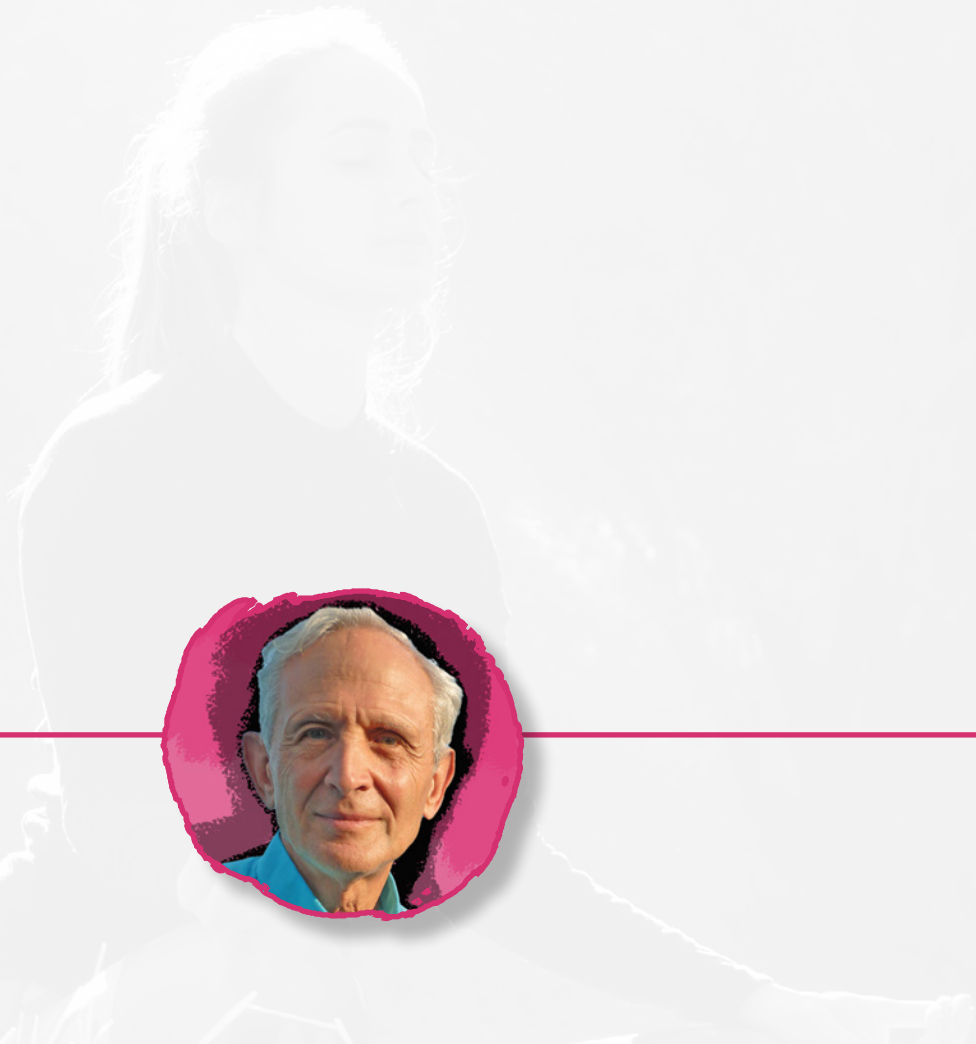


THE MASTER Series

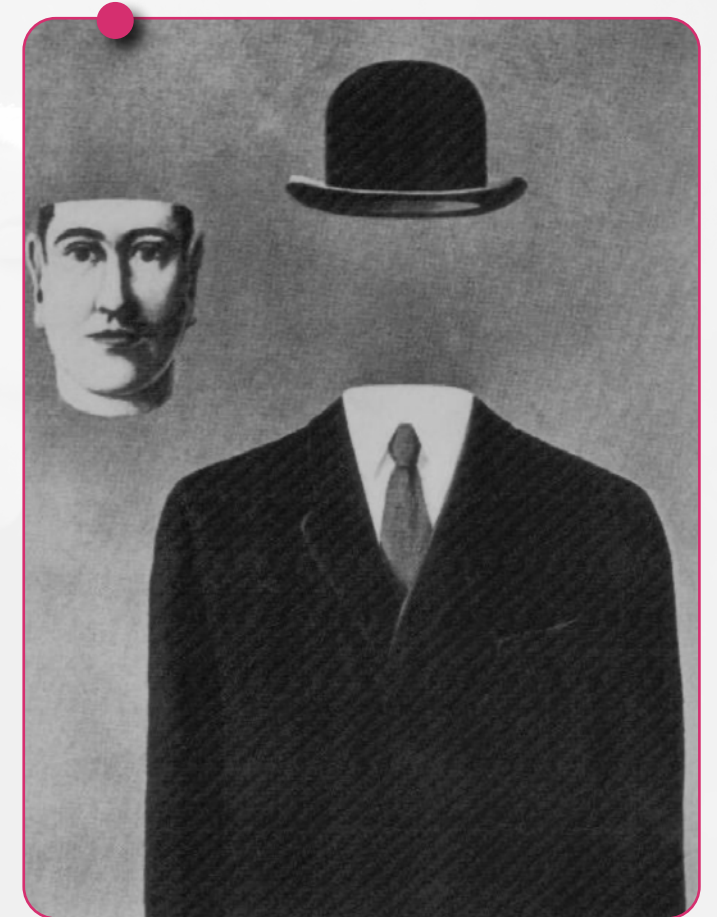
**THE MASTER SERIES: TRAUMA EDITION
-PETER LEVINE**





Dr. Peter Levine is a developer of Somatic Experiencing naturalistic and neurobiological approach to healing trauma, which he's developed over the past 50 years. He's the founder of the Somatic Experiencing Trauma Institute, founder for Human Enrichment, a worldwide organization, committed to training professionals in somatic-based trauma care. In recognition of his groundbreaking therapeutic works, Dr. Levine has received many awards, among them the lifetime achievement award from Psychotherapy Networker, the US Association for Body-oriented Psychotherapy and the honorary award as a Reese Davis chair in Los Angeles for his lifetime contribution to infant and child psychiatry. Dr. Levine is the author of several bestselling books on trauma, including Waking the Tiger, Healing Trauma, as well as In An Unspoken Voice: How the Body Releases Trauma and Restores Goodness.

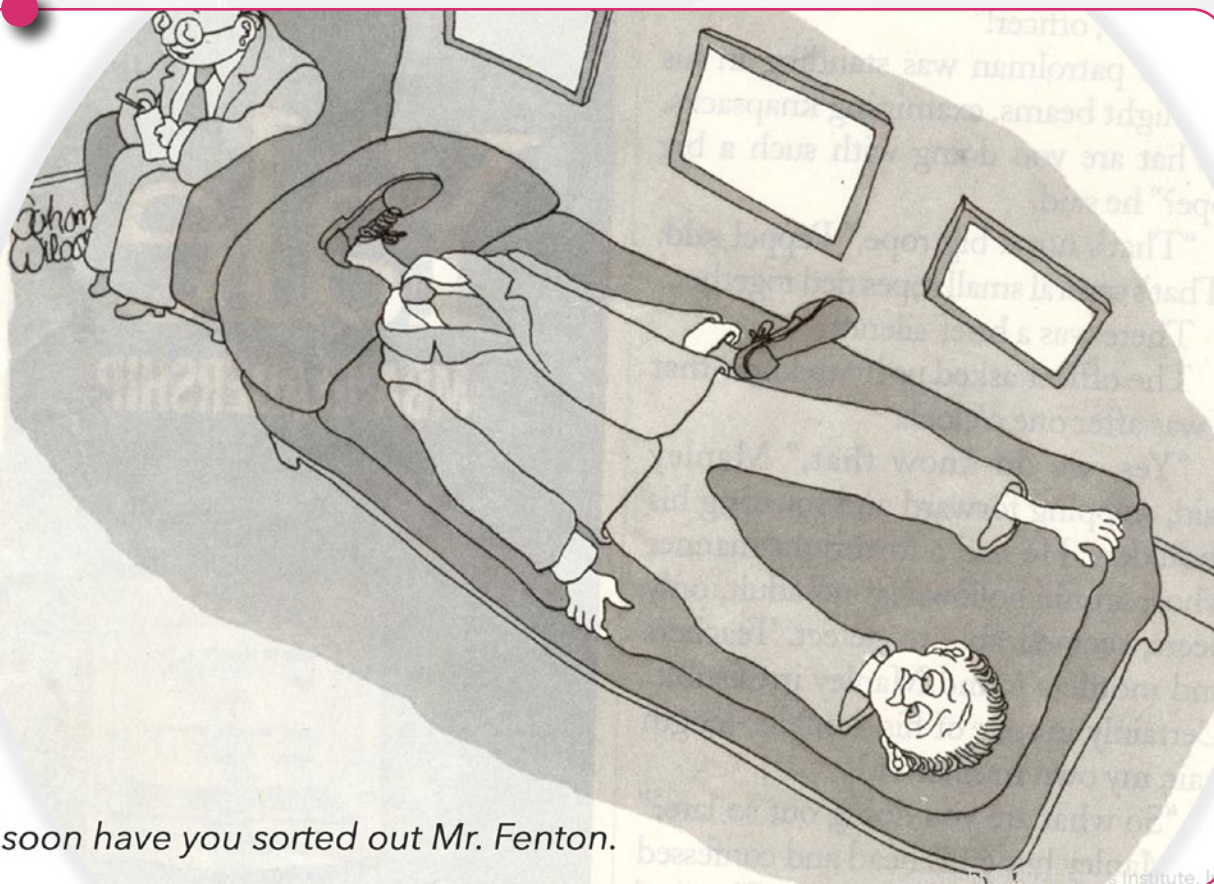
Let's start with this guy over here, Monsieur Descartes. He said that there was a profound separation between mind and body and that mind needed to have power over body. He also said that everything comes from our thinking brain. I want to provide you with something more than just the ideas and the concepts, but with some experiential exercises that are bodily based that help bring mind and body together more. Healing Trauma, as well as In An Unspoken Voice: How the Body Releases Trauma and Restores Goodness.



This is also a representation of the same principle by the Belgium surrealist painter, Henri Magritte.

Here is in the modern psychotherapy situation where the analyst is saying to his patient, "We will soon have you sorted out Mr. Fenton", and that's not going to work by just lying there, discombobulated in fragments. This is something where we have to find out what's going on in the body and how we can help people change those experiences. When I first began developing my work in the late 1960s and early 1970s, I was fortunate not to have the definition of trauma as PTSD already in place. That way, I didn't know that trauma was something that occurs in the mind, in the brain and that there was no real cure for it. The best one could hope is to manage it with drugs or to help people change their thoughts.

Again, the focus of this will be on how the experience happens in the body. What I learned early on in my exploration was that trauma is something that happens in the body. It happens in the brain, it happens in the mind, but it also happens in the body. Really, the body is the main area where we can access these experiences. So if we have experiences of gut wrench, of overwhelm, of our shoulders locked in fear, we have to create new experiences in the body that contradict those particular trauma based sensations and feelings.



We will soon have you sorted out Mr. Fenton.



"When the Japanese mend broken objects, they aggrandize the damage by filling the cracks with gold. They believe that when something's suffered damage and has a history it becomes more beautiful."

Billie Mobayed

This is a guide for all of my work and all of my teaching. In ancient Japan, there was a tradition called Wabi Sabi. I know it sounds a little bit like what you dip the sushi in at a Japanese restaurant, but the tea was a very important integral part of the family and even in the community. So when somebody would come to visit, they would take out one of these cups, these ceramic cups, and pour the tea and share the tea. This was a thousand years ago, and those cups would crack and what they would do is fill the cracks with gold.

The idea was that when something is broken and then healed, it's more beautiful than before. I find this to be an absolutely essential thing that people who have trauma, even severe trauma, they're able to transform those traumas and come back to their own aliveness, their own vitality. They bring to the here and now a new experience of themselves and of the world, which again, is represented here as gold, as transformative, gold as transmuted, if you know something about Jungian psychology.



“Trauma is not what happens to us. But what we hold inside in the absence of an empathetic witness.”

- Peter A Levine, PhD

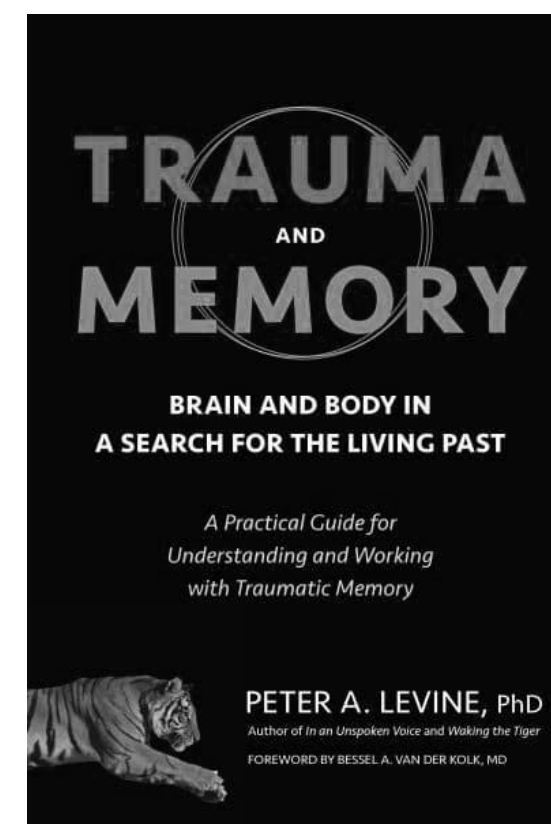
Somebody had asked me to review a book and I came across this quote. And I said, “My gosh, I just totally agree with that.” So, I was getting ready to quote them and then I noticed they were quoting me. So I say that trauma is not just what happens to us, but what we hold inside in the absence of an empathetic witness. And that’s absolutely critical. Of course, you have to have all the tools to help people, but you need that empathetic witness, that; other that’s there and gives you some sense of connection and safety. In my book, *In an Unspoken Voice*, I talk about going across a walkway in a road and a young woman, a teenager, was driving her car and because a truck was parked there, she didn’t see me and she hit me at about 25 miles an hour.

I was thrown into her windshield, thrown up into the air and then landed on the pavement. I literally was out of my body. It was as though I was hovering above my body, looking down and seeing my crumpled body on the floor. Although, I’ve developed methods to help people, 50,000 people, I couldn’t help myself until this woman came over. She said, “I’m a doctor, actually a pediatrician.” And I thought, that’s exactly the specialty that I need. She said, “Is there anything I can do?” And I said, “Please just stay with me.” She took my hand in her hand and in doing that, I was able to come back enough into my body so I could use the tools that I’ve taught to thousands of people, for myself. So I didn’t become traumatized from that horrific event. The key is both having the tools, because without the tools trauma rules, but also having that empathetic witness, the one who’s there and lets you know that they’re there.

The other thing that is poorly understood in trauma is that when a person is exposed to an overwhelming stress threat or bodily injury, they develop what’s called a procedural memory. Trauma occurs when these implicit memories, these procedural and emotional memories, are not neutralized. The failure to restore homeostasis, interbalance, is at the basis for many maladaptive and debilitating symptoms of trauma. And again, that’s something that is so poorly understood, the whole idea of trauma memory. Actually, that was the motivation for writing my most recent book, *Trauma and Memory: Brain and Body in a Search for the Living Past*, how the past lives through us, in us, in these body memories and these emotional memories.

That’s what we have to work with, because what most people think of as memory is what’s called declarative memory.

So I have to remember to set my alarm clock this morning. I have to remember to go to my outlook, to find the links that I’m speaking to you from, how to get my computer set up and arrange things. It’s all declarative memory. And declarative memory is perfectly good for these kinds of things, but it has nothing to do with what goes on in trauma. For that, we have to be able to go to the body memories. We do that through sensation, through being able to contact the bodily sensations, follow them, let them emerge, let them move to resolution and then to transformation.



SOMATIC EXPERIENCING

So what is somatic experiencing? Briefly, it offers a framework to assess where a person is stuck. That's the key, because none of these responses are pathogenic if they're transient, if they're acute. But when we get stuck, that's where the problem is. So we get stuck in the physiological trauma response of fight or flee. This is the well-known fight-flight response. When I first began my work, they were the only ones that were known.

Fight or flight. I discovered very shortly that the most problematic 'stuckness' is in the freeze response and especially in the collapse response. We'll get to that in more detail and I'll demonstrate it with a video clip. These responses are activated to protect us in the moment. They're equally valid, flee, fight, freeze, or collapse. They are all there for survival, and it can become difficult then, when we're stuck, to engage in life with any ease until it's resolved.



They leave us in either a hypervigilant, which is a more noticeable, or the shutdown, which is depression, dissociation, hopelessness, helplessness. So, somatic experiencing provides ways and tools to implement and prevent the physiological and psychological cumulative impact on traumatic exposures. It addresses the physical symptoms and the behavioral responses versus only the cognitive processes. Cognitive processes are important. I'm actually a fan of CBT as well. But until you are really able to shift what's going on in the bodies, you're just dealing with the very tip of the iceberg and that's what needs to be resolved first.

And then one can notice a flexibility in the thought process of being malleable and changeable.

I would say that trauma is the most avoided, ignored, belittled, denied, misunderstood, and untreated cause of human suffering in the world today. And it has ranged from, as you see in the picture, fire personnel, paramedics, war and violence. However, the more common traumas that most of us have experienced, at least to some degree, have been things that have gone on in the home where there has been yelling, screaming, addiction, chronic shaming, that's also a key in keeping people stuck in the trauma response.

The Roots of Traumatization

A threat to survival in the face of helplessness.

The
Fight
Flight
Freeze
Collapse
Response



So the roots of trauma, this is somewhat of a review, are the fight-flight response, the freeze response, (that's like being scared stiff), the collapse response, (which is collapsing in overwhelm and in helplessness). When the definition of PTSD first came out in around 1980, 1981, these were the of the tip of the iceberg expressions of trauma as hypervigilance, anxiety, nightmares, being on edge, and so forth. But there are physical disorders where the trauma is playing out in the theater of the body. And they include gastrointestinal, cardiovascular, neurological, musculoskeletal such as

fibromyalgia, respiratory like in asthma, dermatological, urological, chronic pain, and substance abuse. So again, if you're thinking about the amount of cost for treating these conditions unsuccessfully, and the suffering that people have in not being able to get help, this leads to a despondency over time because the symptoms are real. The physical symptoms are real, but there's no organic cause. The unresolved trauma can impact depression, anxiety, PTSD, but only as one small part, addiction, rage, insomnia, paranoia, dissociation, shut down, suicidal thinking, and much more.

Now there is a video I often show, and you can look it up on YouTube by searching for Peter Levine impala video. I'd recommend you search for the video and watch it as I ask you to perform a little breathing exercise. This video is a portrayal of the fight, flight, freeze, collapse response. What you're going to see is a predator-prey encounter between the predator, which is a cheetah, and the prey, which is an impala. This race goes on at a trailblazing speed of up to 130 kilometers an hour, 65 miles an hour. The cheetah is the fastest land animal by far, but it's only able to sprint at 65 miles an hour for less than half a minute, between 20 seconds and 30 seconds. So if it's unable to make the kill in that time, it will have lost its meal, but also its cubs will starve if it's not able to make a kill within six tries. In nature, this is something that we can see without judgment.

Now in watching this, it may bring up certain sensations and feelings because we have all experienced something like this at different times in our lives. What I suggest is that you take a few minutes just to become a little bit aware of your body, maybe starting with your hands, slowly opening, and closing them. Just getting the feeling of the hands, physical feeling of inhabiting the hand. Also your feet, notice how your feet are contacting the ground. If you're sitting, just notice how the chair supports your back and your bottom. And then notice your breath without trying to change the breath in any way, just noticing the quality of the breath in this moment.





I wanted to demonstrate a few things. First of all, you saw the response to danger, potential danger. All of the herd are alerted. They're scanning the environment. They're being aware of a few molecules of a new scent coming to them, of a bush rattling. They're just getting ready in case they need to flee. I call that the arrest response, and then when the encounter begins, when the chase begins, you're seeing the fight or flight, you're seeing the flight response.

So the impala is running as fast as it's able, that's the flight response, but the cheetah gets her in her grips, takes her down, and you see her not moving at all, that's the freeze response. That's the stiff. You can look and see all of her muscles are absolutely still, stiff, frozen, there's no movement, there's no energy, there's hardly any breath. That's the collapse response.

In many cases, that is the optimal first line of defense. Often, if a predator is after a prey and the prey is in the immobility response, the collapse response, as part of this, as it's a strong vagal response, they may defecate or vomit. And this makes it less appealing for the predator. The predator may go off to try to find livelier prey. If they eat an animal that's been infected, in other words, that's been dead for a period of time, then they too may be infected. So their evolutionary imperative is if the prey is not fighting, if it's not resisting, then leave it alone.

So, when people have been raped, held down and felt paralysis and helplessness, they often blame themselves for not have fought back. But often in nature, this is one of the most important survival reactions of all. Now, the other thing that you saw is in the moment when the cheetah was no longer there, out of the picture the hyenas were still not going in to make the kill, continue the kill, off she went in an unguarded moment.



When the impala are grazing. This is what I call relaxed alertness. The energy increases, it decreases, they're alert, but they're not hyperalert. They're not hypervigilant. They're just living life. Then they notice that there's some possible source of danger. So a little bit more energy is mobilized. Then the pursuit begins and the attack comes at 65 miles an hour, 130 kilometers an hour. All of that energy is being expended for survival. In that moment, when the cheetah brings down the impala, all of that energy gets locked in. She's not moving.

There's no movement at all, but the energy there that was their escape a moment ago is still there. But it's being suppressed. The analogy I like to give is, if when you have a

really fast sports car and you rev it up, but you have your foot on the brake.

So, while the motor is still revving, the car is still motionless when you release the brake, the car shoots ahead. That's what happens here. Now, the thing with people is that the very sensation that took the impala out of trauma, those very sensations of energy, of activation, of aliveness, they become frightening. All of this energy is locked in, but the fear is that if this energy gets released all at once, the person will be overwhelmed. That's one of the reasons that I'm not a big fan of therapies where they have people relive the traumas over and over again, because to the nervous system, being overwhelmed in the present is no different than having been overwhelmed in the past.



So what we need to do, and this is again is one of the basic principles of somatic experiencing, is instead of releasing this energy all at once, we touch into the traumatic sensations or traumatic images, one small amount at a time. So again, here's the energy of fight or flight at the moment when the prey is brought down, that energy gets locked in. At the very end of the film, you saw the impala return to their energy in the fleeing response. It's that energy that gets mobilized. With people that energy is all dressed up with nowhere to go, it's compressed. But if we release it too quickly, we'll be overwhelmed. The key in SE is titration, we help the person access the sensations or images one small amount at a time.

It then comes to equilibrium, and then another release of energy, of sensations in the body and they come to equilibrium. Again and again, so that all of that bound energy, that life energy, that vitality, which was bound up here, the person gets to experience, but experience it in one small dose at a time, one small dose, one small dose, until the person is connected again with their life force, their life energy. I think that this may be one of the ways that SE differs from different kind of therapies, really the earmark of resolution is not erasing the trauma, it's not reliving the trauma, but returning to the here and now with our full vitality, with our relaxed alertness.

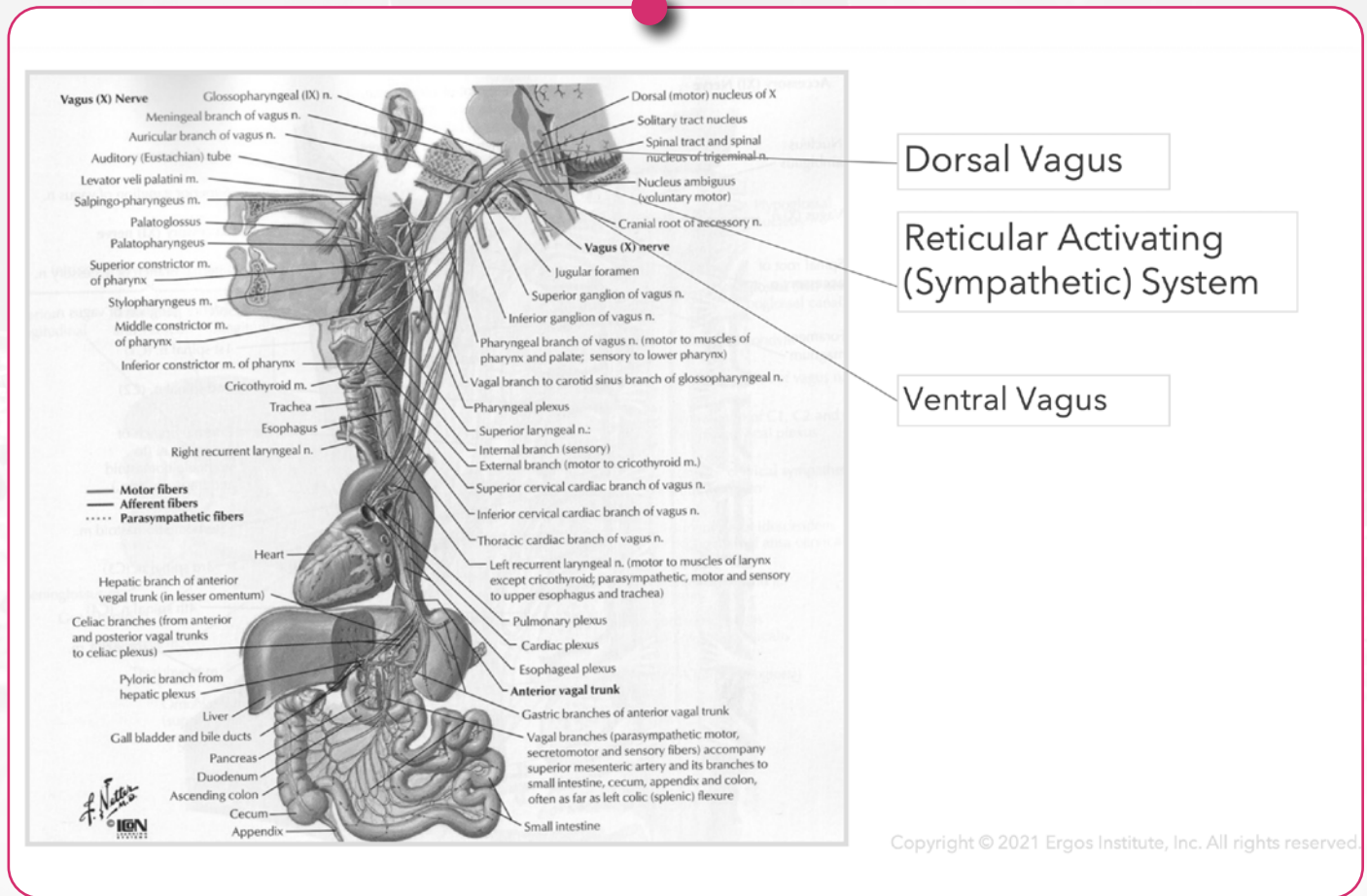


One of the most important things to remember and understand about this, is that animals do not view freezing as a sign of inadequacy or weakness. The impala, when it was laying on the ground, wasn't saying to itself, "Oh, I'm so weak. I should have escaped. I should have, I should have." These are biological responses, they're survival-based responses.

They put us in contact, not only with other mammals, but even with reptiles. It's not a sign of weakness. So often, people who have been traumatized, especially people who have been molested or raped, they judge themselves as being weak and unable to defend themselves. Most of the time, the child is so small compared to the size of the adult, that there's no way that child could escape.

This image is based on Stephen Porges' work on the Polyvagal Theory. What you're seeing here is what's called a midsagittal cut. If I were facing sideways and I cut my head in half, fold out the one side, you'd be looking at the area of the brain called the upper brain stem and the cerebellum. There are three main systems that regulate all of our energy responses, our defensive responses and our social engagement responses. They're located in specific parts of the brain stem. The back of the brain stem is called dorsal, it just means back. The front of the brain stem, or the front of the body, is called ventral. So dorsal back, ventral front.

At the back of the brain stem is a nucleus called the dorsal vagus nucleus, the 10th cranial nerve. And the vagus nerve, the primitive vagus nerve, which we share with most primitive mammals and beyond that. This nerve, which goes from the back of the brain stem, from the dorsal part of the brain stem, it goes from the dorsal nucleus, the nucleus, or the vagus nerve, and the vagus nerve goes down here. You can see that this is the largest nerve in the body by far. It goes down below the diaphragm and particularly affects the smooth muscles of the stomach and the intestines, the gastrointestinal system, but the other organs as well, liver, bile duct, pancreas, and also heart and lungs.



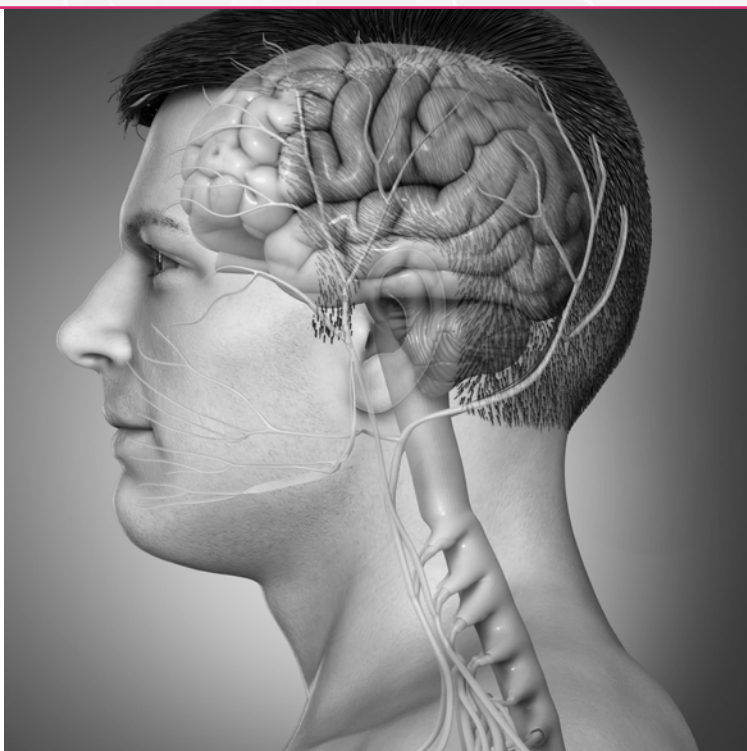
Dorsal Vagus

Reticular Activating (Sympathetic) System

Ventral Vagus

This nerve is the largest nerve in the body. It's a very primitive nerve, it goes way back in our evolution. It goes as far back as half a billion years, to these creatures that lived at the bottom of the sea. I'll say a little bit more about that later, but let's get back to these three systems. This is the largest nerve in the body, it goes to virtually all of the internal organs. Then in the middle of the brain stem, there's a system called the reticular activating system. And this is responsible for normal levels of activation. So when you wake up in the morning and you can't quite get your brain online and you go for a mocha, well, arguably you're stimulating the reticular activating system. When that's activated to a high-high level, then that initiates the sympathetic system, the fight-or-flight response.

So the dorsal vagus, as we'll see, is about the shutdown. The sympathetic nervous system is about fight, flight and freeze. And then there's another nucleus here called the ventral vagus. This comes from Stephen Porges' work, this part of the vagus is a much more evolutionarily evolved component of the vagus nerve, something that we only see in mammals, in higher mammals specifically. It does something very interesting, it goes to three muscle groups in the body. It goes to the throat, to the muscles of the larynx and the pharynx, it goes to the muscles of the middle ear, and it tunes those muscles to the frequency range usually of the human voice. Then the other one is a secondary nucleus that goes to the muscles of the face, but particularly the muscles of the upper part of the face, the muscles around the eyes.



So what in the world do those three systems have in common, and why are they controlled by the same nucleus? And this is where Stephen Porges' incredibly important and brilliant work comes in, because the muscles in the throat, if I'm talking to you in this way and giving you this lecture and talking about the vagus nerve and talking about the sympathetic nervous system, most of you are probably asleep by now or otherwise tuned me out, because there's no rhythm to my voice, there's no prosody. When you see a caregiver with a baby, the way they talk, the language they are using, they're saying, "Oh, you're so wonderful. I love you, love you, love you." Obviously, the baby is not understanding the words, but it's understanding the rhythm, and the infant smiles and giggles.

The inner ear is tuned to those frequencies, and the eyes make contact. This system together is what Porges calls the social engagement system.

Now let's return to the dorsal vagus nerve, to the 10th cranial nerve, the largest nerve in the body. This is something that Darwin knew about back in the late 1800s.

It turns out that 80% of that nerve is actually sensory. 20% of the nerve get signals from the brain stem, and then it goes down into the different organs, but then 80% of that nerve is actually taking what's going on in the body, in the internal organs, and sending that information back into the brain stem. So, if we see something, say we walk out of our door and somebody's hit by a car, all of a sudden our body just goes, "That's in our guts." It could be something that we see, or even something that we remember, but our guts twist, our guts go into turmoil, go into yuckiness. This nerve, which Darwin called the pneumogastric nerve, he realized that it was primarily a sensory nerve.

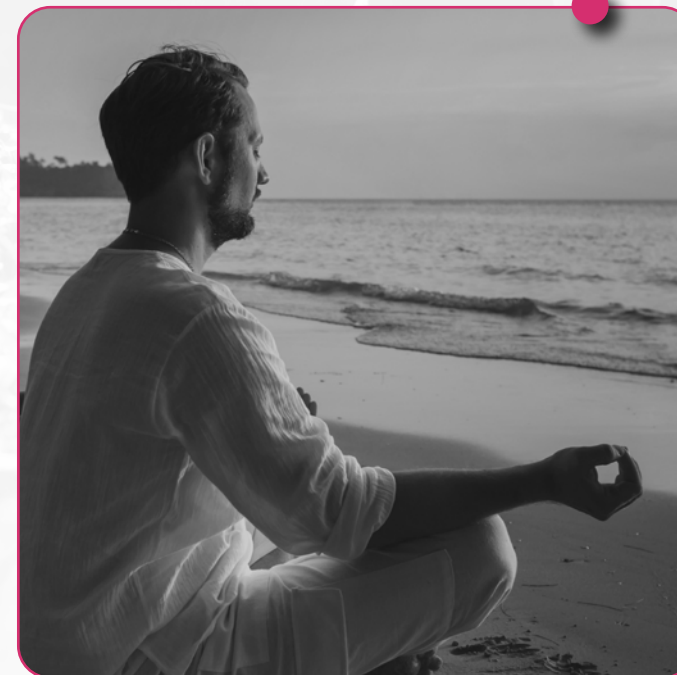


So again, we see something horrible and our guts go, "Yuck." Then that sensation of yuck gets sent back up the vagus nerve where it's actually amplified, and then it goes back into the guts again. So we start with, "Oh, I hope that person's okay." Then to, "Oh my God, yuck. Oh, I think they're really injured." Then we get to stuck there. When we get stuck there, that's when we tend to have these physical symptoms of gastrointestinal problems, breathing

problems, cardiac rhythm problems, and so forth. So the question is, how can we interrupt this vicious cycle? I call it a positive feedback loop with negative consequences. How can we help the person move out of this back into their aliveness and vitality, and ventral vagus social engaging? And that really is a map that we use in working with traumatized people.

MOVING OUT OF THE SHUTDOWN AND BACK INTO VITALITY AND ALIVENESS

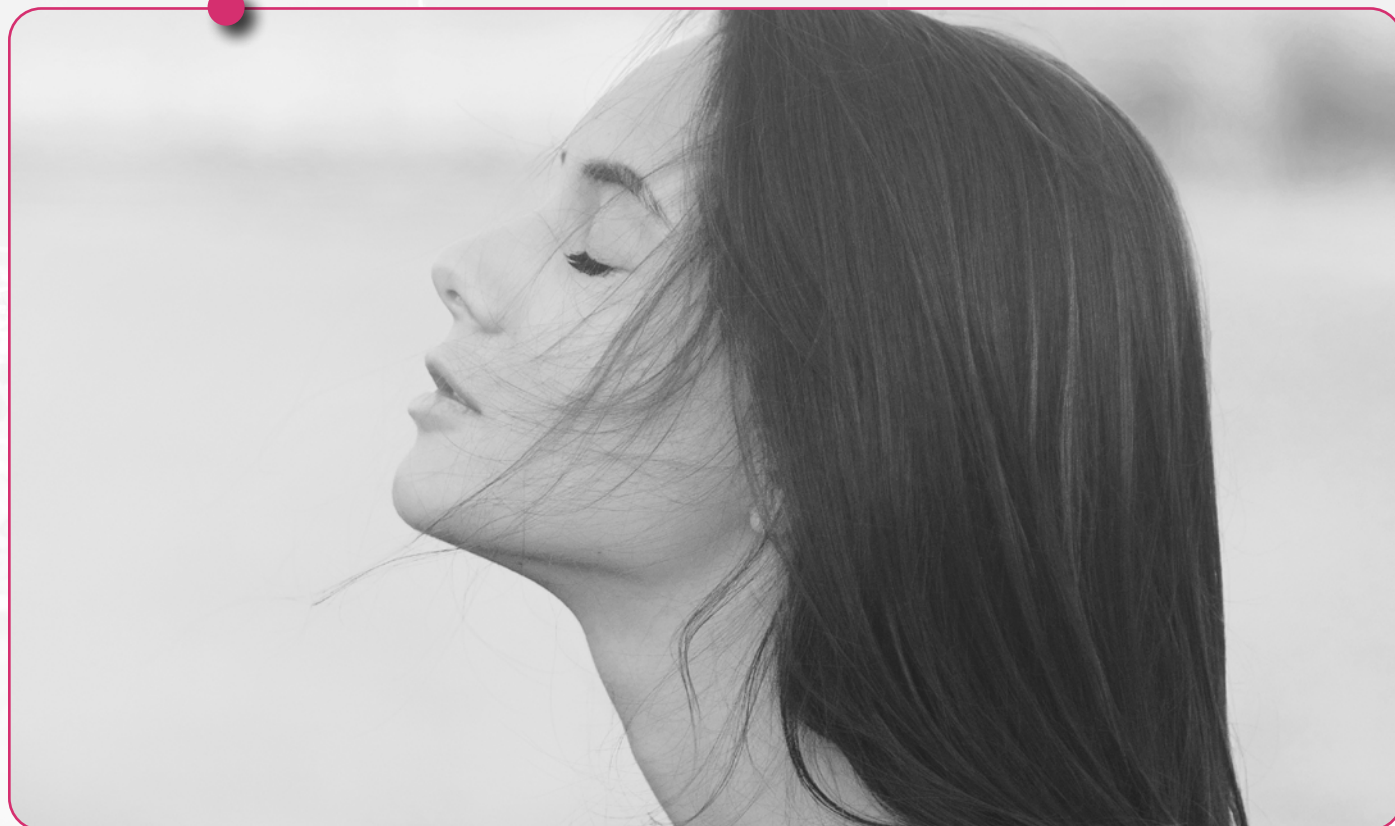
I invite you to do an exercise. I call these awarenecises, because the emphasis is on the awareness, not just on doing. Let's return to this feedback loop with negative consequences that we see with the vagus nerve. And again, this nerve is like a super highway connecting brain and body. In review, we see something horrible and feel it in our guts. Then later on that day, if we think about it picture it in our mind we feel that yuck again. But every time it happens, it gets amplified. It goes from, "Oh," to, "Urgh," to, "Ugh," and to loss of energy and vitality, nausea. When we're stuck there, we're really stuck in this overwhelming feeling of helplessness, of dissociation. How do we break this cycle?



Darwin recognized 250 years ago, that this nerve had more nerves that were carrying information from the guts, from the organs to the brain, than from the brain to the different organs. So this way, if we have a distress, it gets amplified. Then all of a sudden lose our appetite, or we have diarrhea or constipation. And there's nothing physically wrong, but it's very likely it's that these systems cause the shutdown, and also the sympathetic, but particularly the shutdown system. What can we do to break this cycle? Darwin called this nerve the pneumogastric nerve, the lung-gut nerve, again recognizing that it connects to the different organs. He said that this nerve is responsible for gut wrench and heartbreak. And indeed it is. So when we're stuck in gut wrench or heartbreak, what are some ways that we can actually come out of that and reawaken ourselves to the here and now?

What we need to be able to do is change the signal, the yuck signal that's coming from the gut back up to the brain. It also has to do with our breathing, because if our breathing is very shallow or rapid and high in the chest, that will activate the sympathetic system, the very low levels will more likely activate the dorsal vagal shutdown system. So, how to change the breathing pattern and get new physiological information from the guts back up to the brain stem. Now, with breath, there are a number of exercises. They usually involve something like counting, for example, two on the in breath, hold it for two, then exhale for a count of four. They can be of some help, but they really don't change the spontaneous rhythm of the breath. This exercise, I believe does just that.

The idea here is to just take an easy, full breath, not to force it in any way, as much as you can. I'll demonstrate it, take an easy breath, and on the exhalation, make the sound voo, but vibrating it here in your belly, vibrating it right here in the belly. Letting the sound and the breath go all the way out, and let the new breath come in on its own, really filling the belly and then filling chest, and then repeating. Now, with this exercise, majority of people will feel relaxation or tingling, vibration, aliveness, sensations of aliveness, but it also can bring up sensations or images that are associated with trauma, even just doing this a couple of times. So if it feels too much, don't do it.



Again, take an easy breath, make the sound, vibrating from the belly. You are stimulating those receptors that are going back up the vagus nerve that say, "All is clear. You don't have to twist your guts anymore. The horror, whatever it was is now over." Again, take an easy, full breath. On the exhalation, make the sound vibrating from the guts, from the viscera, from the diaphragm, let the vibration continue and let the breath go all the way out with the vibration, with the voo sound. And then again, just opening, allowing a new breath to come in.

And then once again, rest, just rest, and notice sensations, feelings, thoughts, images. Just enlist curiosity. One of the great resources we have in working with trauma, is capacity to have at least some limited amount of curiosity, "I wonder what's going on right now?"

This is something very simple that takes us enough out of the shutdown to where we can feel more aliveness, more of a vitality in our bodies. You may experience anything ranging anywhere from tears, it could be tears of sadness or relief to pleasant feelings, pleasant sensations. It can also be little bit scary maybe. The idea in titration, this is an example of titration, which we just did with two breaths, then came back to the here and now. So obviously we can go deeper and deeper and deeper. The key is in doing it one small amount at a time and titrating, moving into the uncomfortable sensations and then expanding into the more comfortable, more expansive sensations.





It's worth a little review here. So, the three main systems for our whole energy regulation; the back of the brainstem; the dorsal vagus; the middle part; the reticular activating system; the fight-or-flight sympathetic system. And in the front in the ventral area; the social engagement system, this is the system that should be our default. I think somebody said, "I feel closer to you, Peter." I'm not sure they were the exact words, but the ventral vagus speaking. I'm just a stranger, but that person felt the connection because their ventral vagal system was activated, not because I'm some kind of a wonderful guy, but because that's their innate physiology and that should be the default.

The more that it becomes the default system, the more peaceful the person's environment, and their whole world will be. Wouldn't it be nice if we could move through our fear and our rage and be able to come to settle in ourselves and settle with each other? I did a class around 20 years ago. It was before the last intifada in Israel and Palestine. I was working with this Israeli gentleman, and there were no thoughts or images. Somebody asked the question, "Can you work with the trauma if you don't know what the trauma is?" And I said, "Absolutely. All you need is a symptom or something that's haunting you. And then you can work with that."

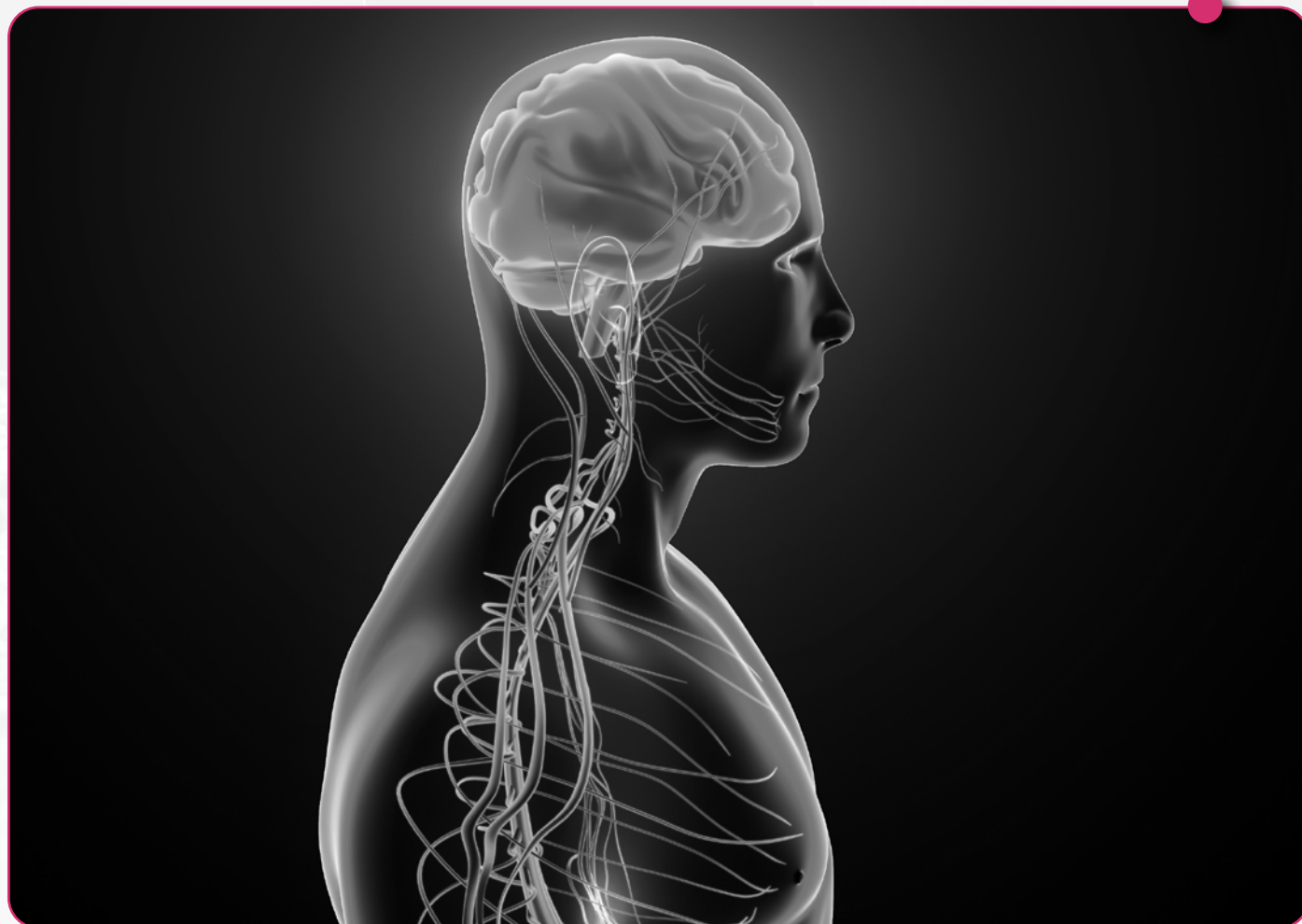
And not always, but often, there's a connection between the images of the trauma. It's not necessary. So he volunteered, and he had had 30 years of severe back problems. We did the session. Again, there was no content at the time. He opened his eyes and looked around the room and he said, "Something's different. Oh, I'm not feeling the pain." I could see everybody was moved just by the bodily responses that were going on. The person I worked with was actually an Israeli. He was a very, very well-known psychoanalyst who pioneered the psychoanalytic treatment of Holocaust survivors. I asked if anybody wanted to share something. This woman stood up. She was from Gaza Mental Health. She was elegant, she was in a gray business suit and had a very striking presence.

She said, "Chaim when you volunteered to work with Dr. Levine, I was just praying that something horrible would happen to you, that something really bad would happen to you because you have humiliated my people. You have tortured my people. Have killed my people. And I was just filled with hatred for you and for all of Israel." She said, "But something happened. I can't explain it. I was just watching you and Dr. Levine and at the same time I was feeling my own body. Then something happened. I can't explain it, but I felt care for you. I even felt love for you and for the sadness about how we harm each other and how we are unable to make peace. Then it occurred to me, Chaim, that until we're able to find peace, deep peace within ourselves, we will never be able to find peace with each other."

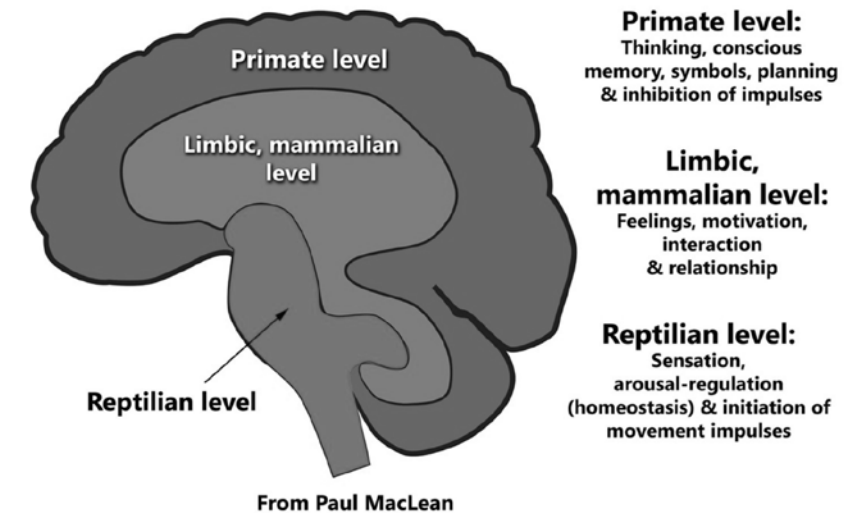


Once we get into the nervous system, default of the social engagement, and can make eye contact with others and feel that we don't have to live in fear, then things can profoundly change. If you want to look at this picture again, it's in the Netter books, it's also in an unspoken voice.

It's really worth looking at these nerves and just getting the picture of how their physiological responses are and how they actually course through the body. By the way, the word vagus has the same root as vagabond, from the Latin wanderer, because it wanders all over the body.



The Triune Brain

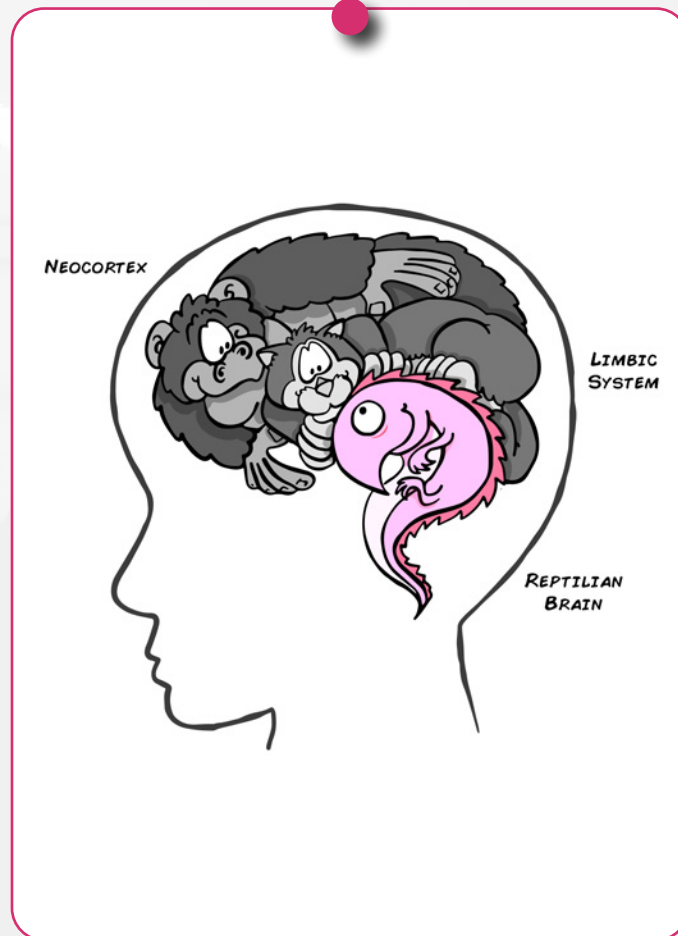


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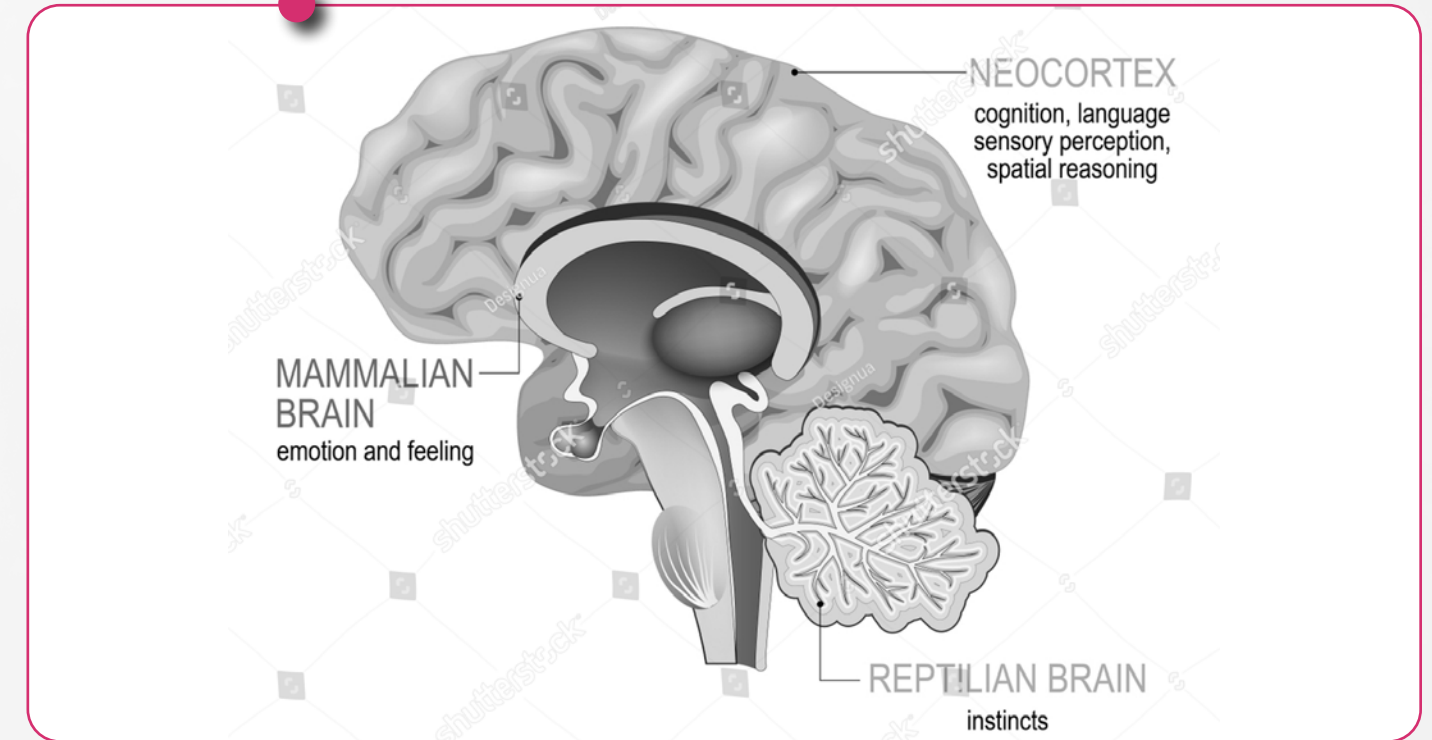
We've gone over this but by way of review, this is from the triune brain model of Paul MacLean, a very important brain researcher. I actually met him in the 1970s. This is now a model where people say, "Oh, it's obsolete." But it's not, it's not 100%, it shows an interesting way of looking at our brain and our behavior. There are three main components. They interact with each other, but they are anatomically separate. In blue, we have the primate level, that's the cerebral cortex. Then we have the limbic level that we share with the mammals. And then the reptilian level, the brainstem, and the cerebellum which we've been talking a lot about.

That part we share with primates, mammals, and even with reptiles. And each one has its own function and its own language. In order to understand how to work with trauma, we have to see what parts of the brain that trauma is being organized, and being able to work with these three components together, primarily from the bottom-up. From the reptilian level, through the limbic mammalian level, through the primate level. Let's go over briefly, the language of each of these primary brain regions. The primate level is about thinking, about conscious memory, declarative memory, which I spoke about. About symbols and manipulating symbols. About plans, making plans. And inhibition of some of our impulses.

Each language is the language of thinking and declarative memory. The limbic system is about our feelings, emotions, our motivations, our interaction and our relationships. We relate, not primarily through the primate level, but through the limbic level. When we're with somebody and we feel good that's in the limbic part of the brain. It's not in the cortex. It's not in the neocortex then. The limbic mammalian brain again is about how we are motivated, how we feel, how we interact with others. The language is the language of feelings and emotions. The reptilian level, the brainstem level is the language of sensation, tingling. A number of you describe sensations, tingling, vibration, warmth, coolness, hot, cold. All of these sensations have to do with our arousal regulation of equilibrium, homeostasis and the initiation of movement impulses. The initiation of impulse movements.



Let's go back to the primate level. Remember that's about inhibition of impulses. We think of the neocortex as being the highest part of our brain and the reptilian as our lowest, incorrect. But again, the reptilian level is where our impulses come from. So, when we're hungry, our reptilian brain is telling this. When we're horny, when we're sexually aroused, our reptilian level is telling us about this. When we feel tired and want to rest, the reptilian level is telling us this. But the thing about the reptilian level is that we can get three or four of these different movement impulses occurring at the same time.



So we'd be in helter-skelter, except that the primate brain, the neocortex, highest part of the brain, the neocortex as we can see here, it comes around... this is the prefrontal cortex. Again, these are the areas that we see as our highest level of cognition. It comes all the way around and look what it does. It abuts the brainstem. If you want to sell a house or buy a house in a certain part of town, if it costs a lot of money, even if it's a completely rundown and you're going to have to tear it down and rebuild it, it's not about the house itself, it's about location, location, location. So, if you have two parts of the brain just abutting against each other, there's got to be a reason for that.

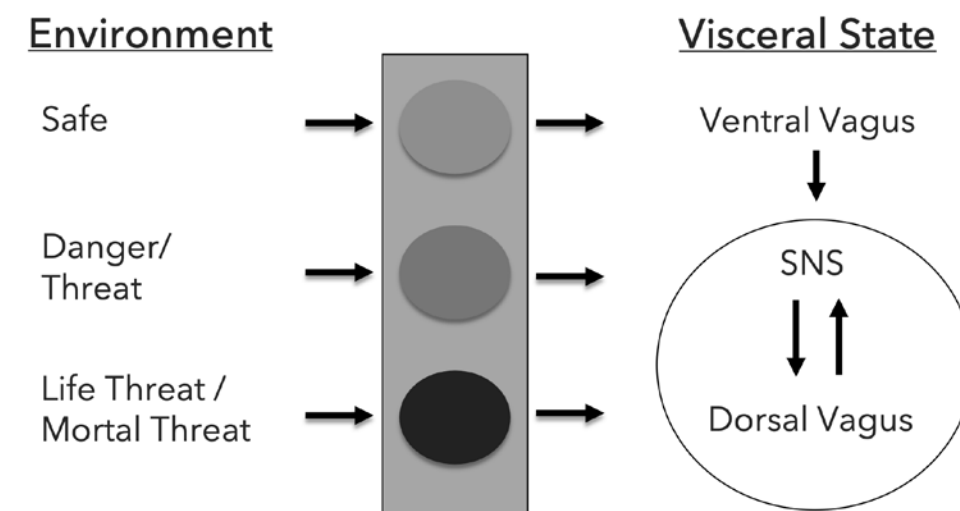
It's bringing up both of our sensations, but also modulating our sensations and sorting out our sensations and inhibiting the ones that would not be useful. Then allowing the one that would be useful at this moment in time. It's working with what I call the bottom-up sensation level from the top-down, to hold them together in terms of our impulses and in terms of inhibiting our impulses on allowing one to predominate. How can you tell when a person, even if that person happens to be you, that the person is in a sympathetic dominance state, like the fight-or-flight response? These people will be the people who tend to be angry, confrontational, belligerent, hostile, anxious, fearful, agitated, hypervigilant, on edge, and feeling unsafe. Those are the general characteristics of the sympathetic nervous system being kind of chronic.

When the dorsal vagal system becomes dominant and chronic, we then experience shut down. We feel numb. We don't really feel, we feel numb. There's this movie called the Pawnbroker. It's really worth seeing. And it's about this man who's a pawnbroker. This young man comes to work with him, and he really has contempt for the boy, and the boy is killed. In the old times, they had these posts, with needles, where you put receipts on it, and they would just pile up. So it had a sharp edge and it was connected to a base. What he does when the boy is killed, he takes his hand, and he pushes the hand so that the sharp part goes right through it. It's because he felt numb and he needed to feel something, anything. Often, people who cut, they are trying to feel through that numbness, they feel lifeless without energy, hopeless, helpless, they feel deeply abandoned and unwanted. I call this the walking dead.

When the ventral vagal system is activated, we feel engaged, we feel open, curious. Again, if we can get some curiosity, that's going to enhance the ventral vagal system and allow us to look at the sympathetic and the dorsal vagal systems with a little bit more distance, to be able to stand back and to observe those sensations and those feelings. When we're in the ventral vagus system, we feel playful. We want to be with our friends, we want to hang out. We might want to play sports, we feel like, "Hey, let's just hang out and just see what happens." We feel openhearted, we feel friendly. We are generous. We're kind to other people. We're empathetic and we're compassionate. Which one of these three would you like to remain in? Well, that's pretty clear, but, if we're stuck in the other two, how do we move through them into their ventral vagal system?



Neuroception: Promote mental and physical health

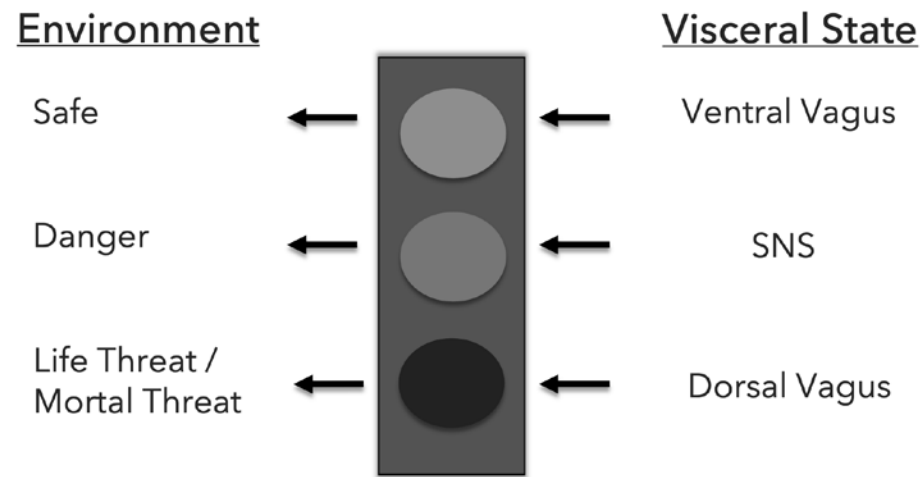


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This here is what Stephen Porges calls neuroception. I think I will be remembered, maybe, for pendulation, one of the things that Stephen Porges will be known for throughout eternity is neuroception. Basically, it's how we sense the outside world. If we experience it as safe, then that will stimulate the ventral vagus. If on the other hand, we experience threat or danger in the environment that will stimulate the

sympathetic nervous system. Now, if a person's sympathetic nervous system is stimulated, so they're in a little bit of a jittery state, you can use the ventral vagal system to down regulate it, to soften it. However, if we experience mortal threat, such as the COVID pandemic, then we move into shutdown. When we're in shutdown, the ventral vagus is really not able to get us out of shutdown.

Neuroception: Promote mental and physical health



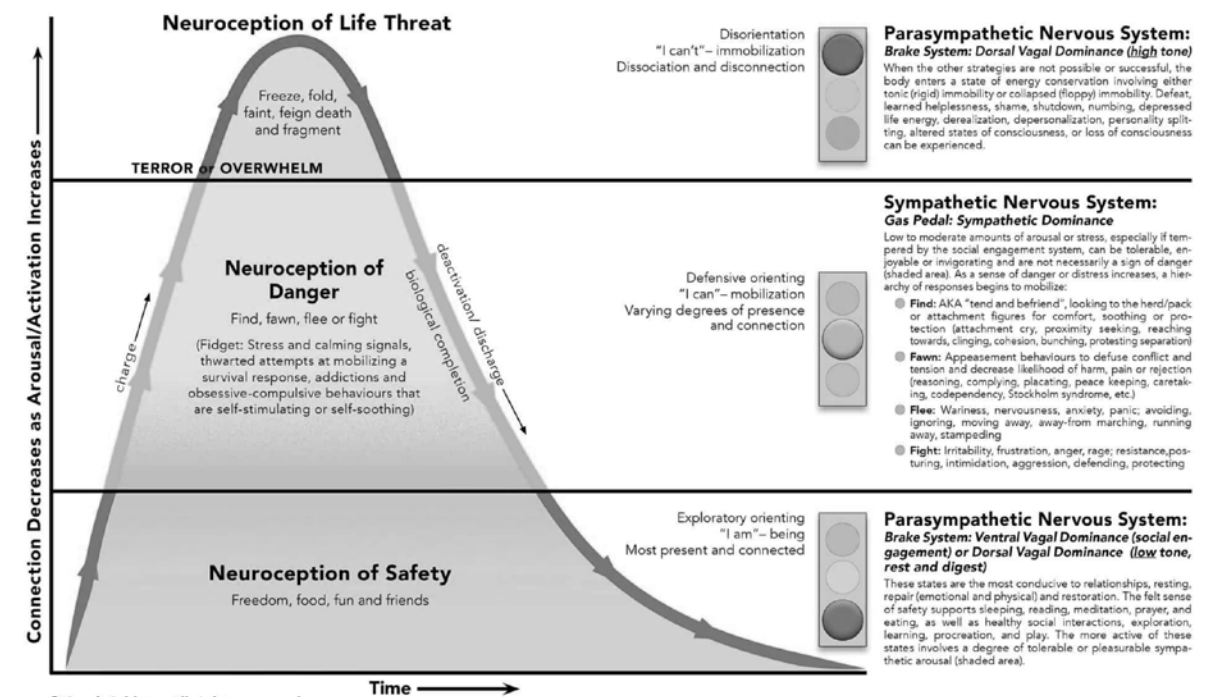
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The sympathetic nervous system can help us move out of this dorsal vagal system to a more activated state. When we're in a more activated state, we're able to engage the ventral vagus system, at least to some degree. Again, this is from Stephen Porges, when we first met, my thing was trauma and his thing was psychophysiology and we stayed together. I consider us to be close friends and brothers. We co-developed our body of work in a parallel way over the following decades.

So in the 'I' environment, if it's safe, for example you go to a hospital and everything is chaotic, or you go to a hospital that has a beautiful room with flowers and beautiful paintings on the wall and nice colors, it feels more safe. It's a more healthy environment to be in. Again, when we experience danger, we mobilize to fight-or-flight. If the fight-or-flight is unable to extricate us from the situation, then we may default into life threat, mortal threat shutdown.

I said, "Stephen, this is really great. But with your permission, I'm just going to make a slight addition to this". Forget the environment, when our visceral state is in the dorsal vagal system, we will experience life threat, mortal threat. So, if we're in the shutdown around the COVID virus, we will be experiencing life threat out in the environment, everywhere, even if it's not there, especially if it's not there because

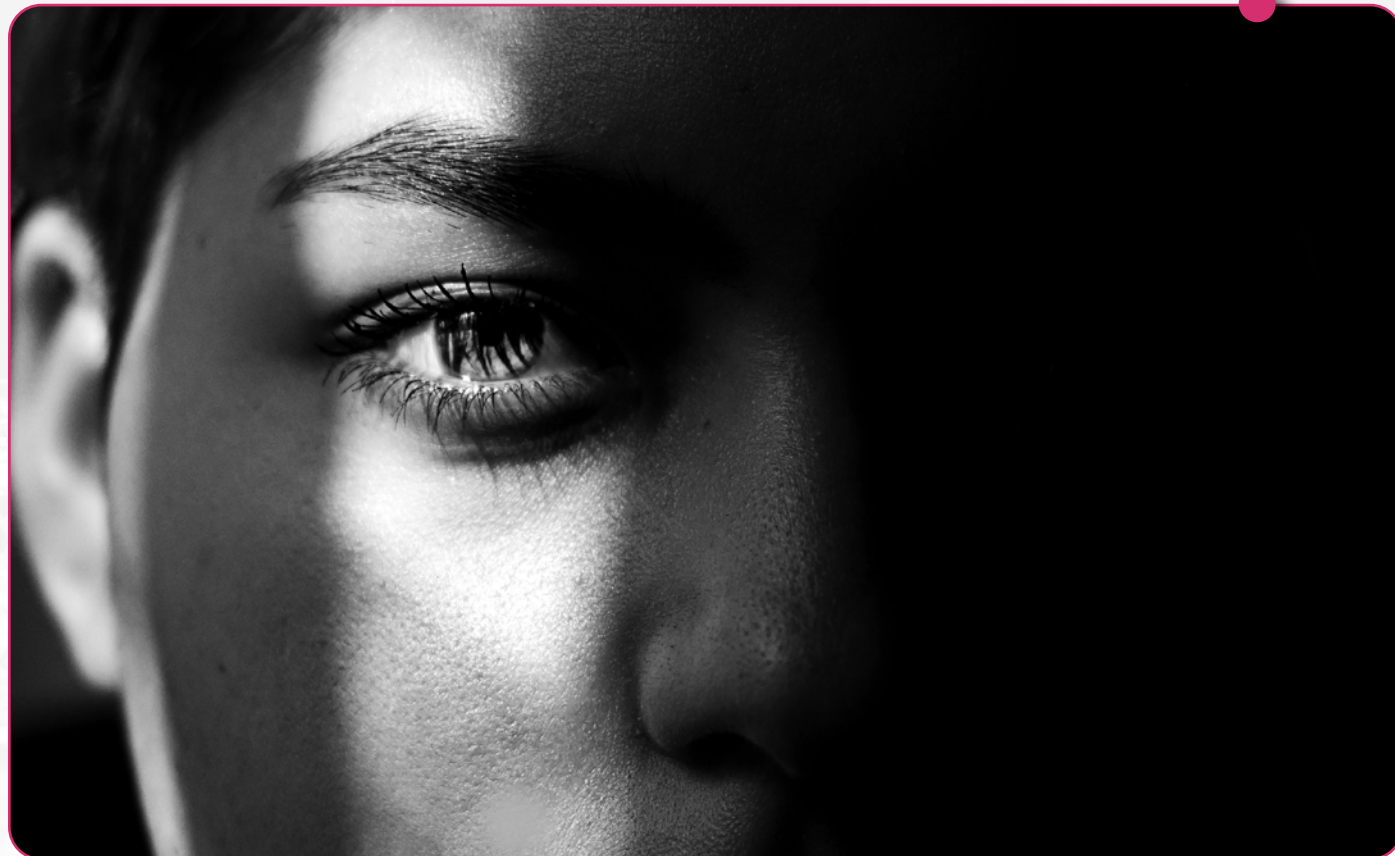
it's going to be out in the environment because of the internal environment. As within, so without. This won't change. You can't change the dorsal vagal system by trying to reason with a person to not see things as a life threat. Maybe you can, 1% out of 100, 2% out of 100, but really not much. So that's what the nervous system is, in the dorsal vagal shutdown system with the vagus nerve, the unmyelinated 10th cranial nerve.



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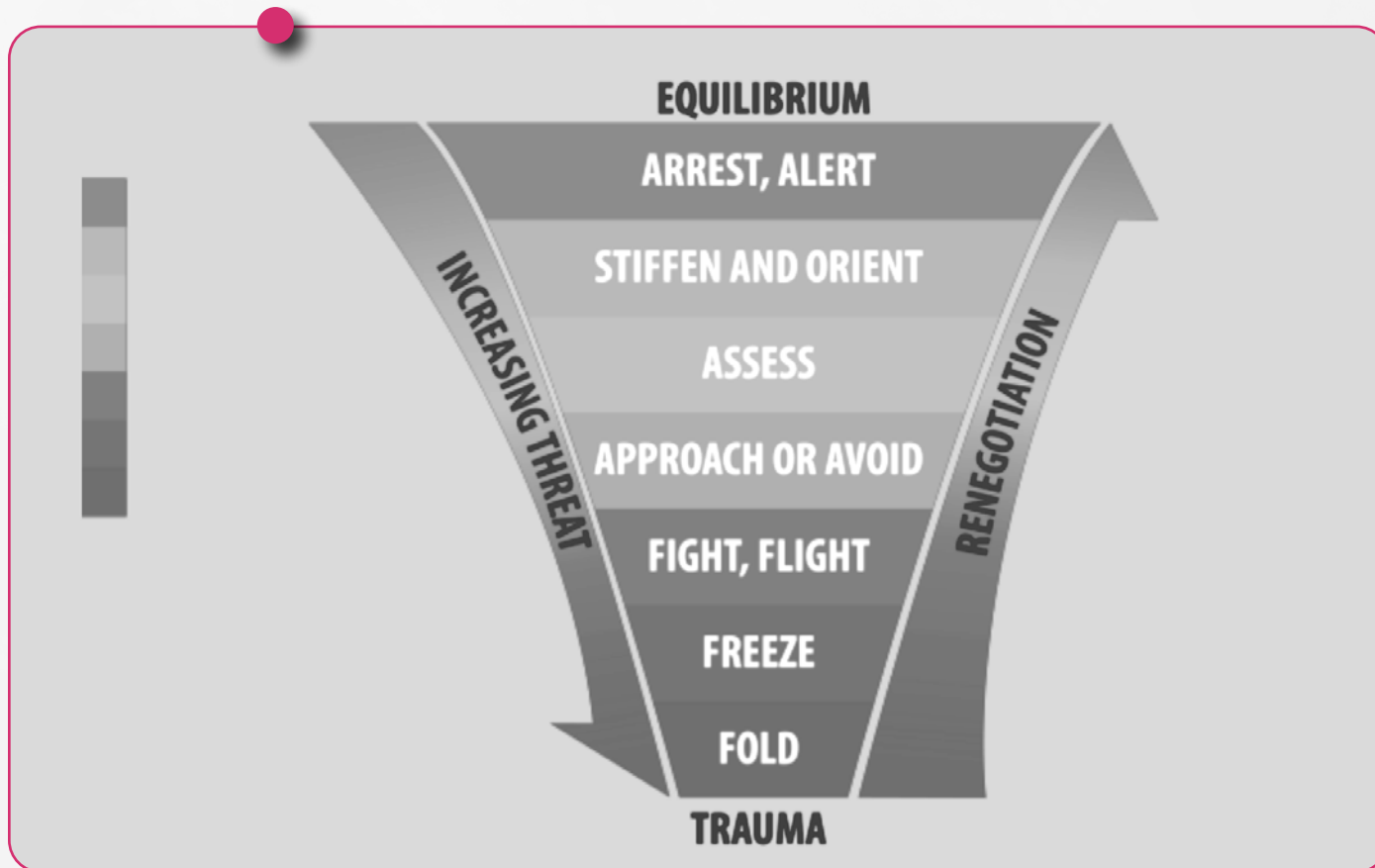
If on the other hand, we are in the sympathetic state, then we would experience danger, in a way it's a lot safer than mortal threat, but it's still not a good place to be. When we can help the person move through the sympathetic nervous system activation, to the social ventral vagus, then the environment will seem safe.

Now, if the environment is actually not safe, if it's dangerous, if it's threatening, we won't see it as safe because it's not safe, but we will not be seeing everything as dangerous or life threat. So again, as within, so without. I call part of this bottom-up processing, which is crucial in somatic experiencing, working with the sensation level, with the reptilian level.



One of my students wrote it in a very good, slightly different way. On the bottom, we're talking about increasing arousal activation, increasing activation with different components. So, neuroception of safety, we have freedom, food, fun, and friends.

Then we move into charging that arousal and we go into fight-or-flee. When we're in that fight-or-flee response, we mobilize our survival responses. It often leads to addiction, obsessive-compulsive behaviors, and self-stimulating, or self-soothing.



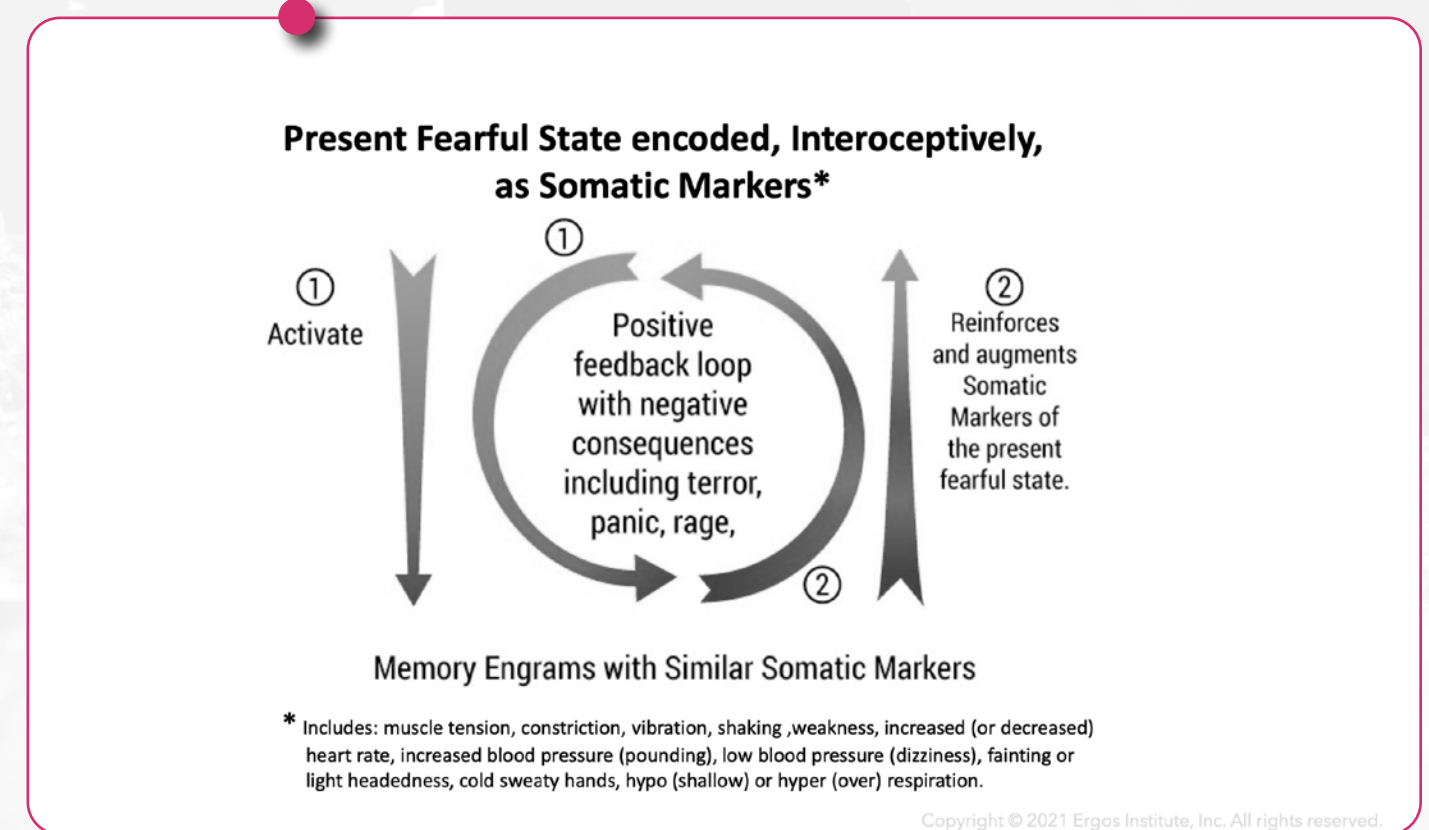
Then as that arousal increases into terror or overwhelm, that's when we freeze, we fold, we collapse, we faint. It's sometimes called death-feigning, but again, it's not a feign, it's a profound physiological response, we fragment and disassociate. So wherever we are, we want to get here. If we are in fight-or-flight, we can, like with that little exercise, go from neuroception of danger to neuroception of safety. But when we're in the neuroception of life threat, we can't move directly to orienting, to being present, connected. We have to move first through the fight-or-flight response, mobilize and move through it. When we move through it, then we will spontaneously move into.. guess what? Social engagement.

We're most present and most connected. Another way of looking at this, like also you saw with the cheetah and the impala, at first that they're at equilibrium. There's the sense that there's some kind of possible danger. You become a little bit more alert, then you stiffen and orient the environment. Then you assess, and again, this is not a conscious thing usually, whether this is dangerous or something to approach. You either approach it or avoid it. If it's something to avoid, we respond with fight-or-flight, with freezing, or with collapse. That's what happens with increasing threat, and to resolve the trauma, like you saw in the previous diagram, we're moving from fold, collapse, to freeze, to approach-avoidance, and then back to equilibrium, to arrest, and alert. So as you go in, so you can come out.

This is a diagram from Trauma and Memory. This is one of the pitfalls that people tend to get into when working with traumatic memories. Let's just say the person comes in to see you and they're in a fearful state. This is encoded interoceptively in the body as muscle tension, constriction, vibration, shaking, weakness, increased or decreased heart rate, increased blood pressure, pounding, low blood pressure, dizziness, fainting or lightheadedness, cold, sweaty hands, hypo, shallow, or hyper, over-breathing. So they're coming in a fearful state, as encoded by those sensations. Again, that's reptilian brain, that's all reptilian brain.

Let's say the person comes in and you try to get them to access a memory, a traumatic memory. Well, what will happen if you look at number one, here, (present fearful state,

somatic markers), you activate a memory engram, a complex memory, or memory components with similar somatic states. That gets amplified and it reinforces and activates the markers of the present state. So again, we wind up with a feedback loop with negative consequences, including terror, panic, and rage. In other words, when you are having the person find a memory, that memory is a library of stored experiences. You will find the one that's similar to the one that the person is experiencing when they come in to work with you, to see you. I know it's a little bit counter-intuitive, but what happens is you get this circle in the middle here of just going around and around chasing its own tail with increasing levels of terror. Often there's an emotional reaction. This is considered to be therapeutic, but it often is not.



Let me give you an example of how this can happen and why it's so important to work with the procedural memories, not just with the emotions that might occur because of this positive feedback loop. First of all, I want to say something that many, many people, probably at least half of the people, in the United States, and also in Europe where I'm more familiar, have experienced some kind of molestation as children or rape at some time in their lives. It's very, very common, sadly, unfortunately.

I was asked to see this guy who had a history of suffering from depression, but nothing like the way he was suffering currently. He went to see this therapist and he was basically was reporting what it felt like to be depressed. And the therapist said to him, "I hate to tell you this, I'm sorry to tell you this, but your symptoms are the same as the symptoms that women have that have been ritually abused."



He then entered him into group therapies, where people would relive these traumas of horrible neglect and ritual, systemic abuse. He would then start getting memories associated, similar memories. So he was there for a year and the more memories he recovered, the more his depression deepened. Finally, a friend that had said, "You have to stop this." Then he was referred to me. I assured him that I was not going to be looking for any memories and that I work with bodily sensations, that my only goal was to help resolve his depression.

I started working with his body sensations and he could feel some pain in his lower back. He had no sensation, just numbness, in his pelvis. We just stayed with those sensations and then he could feel his back starting to arch when he felt the tension that was underneath the pain. He could feel his back starting to arch and he really let that go. It was this idea of pendulation, just touching in, increasing the tension, releasing the tension. A lone tear came down his face. And he said, "I know what this is about."

When he was 12 years old, for some supposedly medical reason, he was circumcised. He had bandages on his penis and his mother was told that she had to replace the bandages every day, but she was so uncomfortable with that, that she ripped the bandages off. He experienced the shock from that. So, it could have felt like a rape or molestation if other people were having those memories. That's why it's so important to work with the procedural memory and not just go to the fearful state and dig up all of these fearful memories. It's important to be able to complete them.



So when he arches back and then released his back, he was going through that memory, but it wasn't a conscious memory. It wasn't even an emotional memory. It was a bodily memory that his body was doing to try to get away from this horrific experience, the pain of having the bandage ripped, and also seeing the disgust on his mother's face. This came back also after we did a couple of sessions. Again, it's really important that we don't just go for the memories, but we see how the body has responded to its different traumas and accumulated stress over the years.

When people are traumatized, there's a tendency to attribute falsely to your experience. This is something that we have all experienced. For instance, we do something and it's some kind of a problem. And we say, "Oh, it must be due to this. It's just a totally irrelevant thing." But we have a need to try to attribute what's going on.

We don't have to know the facts of our story to be able to resolve the symptoms or the outcomes, because often, the so-called memories are fallacies of attribution. We attribute our internal state to something and that could be correct or it could be completely wrong.

The Fallacy of Attribution:

"You don't have to know the facts of your story to be able to reprogram the symptoms or the outcomes."

- Peter A Levine, PhD

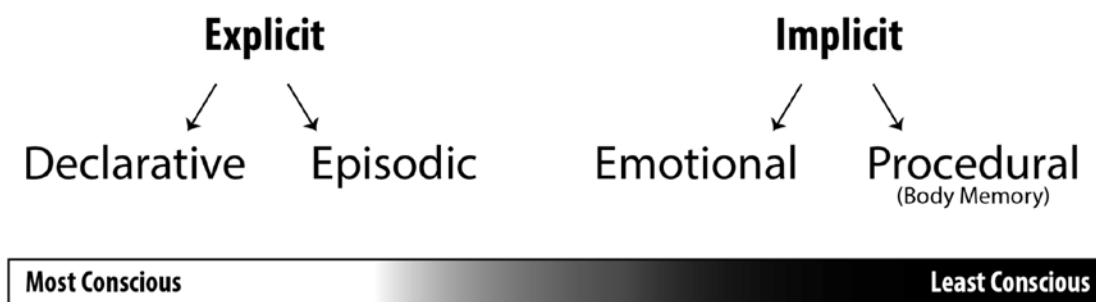
I want to summarize the memory systems because it's really so important when you're working with people who are traumatized. This image is also from Trauma and Memory: Brain and Body in a Search for the Living Past. There are two main types of memory.

There are explicit memories and this involves both declarative and another form of memory I haven't talked about yet, episodic memory. Those are the explicit memories. As we move from left to right, we move from more conscious, most conscious to least conscious. The least conscious implicit memories are emotional memories and procedural memories.

An example of an emotional memory of a trauma: You're in a room in a party and you're introduced to somebody, all of a sudden, you go into terror or rage. I mean, this is a perfect stranger. What's going on here? Well, if we dissect this, we find out that this person was smelling, let's say, of either cigarettes or from alcohol, and a person who was an abuser of that client, he was a smoker and a drinker. So again, seemingly out of nowhere, that explodes upwards and there's a burst of an emotion. There's no reason for it. The client might try to attribute something to it, but it's going to be nothing more than attribution.



Basic Memory Systems



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Then the other ones are procedural memories. I was mentioning the example of the person who was sexually abused and when they were touched by their caring partner, their whole body stiffened. Those are procedural memories. So, you need to work with the person with those procedural memories so that you de-potentiate them, you take the fang out of them so that gradually, they can learn that being touched is safe. But you have to be able to work with the procedural memories, not just the emotional memories.

Often, what happens is, after we've worked with some of the implicit memories, we often tend to get episodic memories. Episodic memories make a coherent narrative about what happened to us. Somebody asked the question, "Was it necessary to know what the trauma was?" And the answer is no, not necessarily, but then again, it will tend to go into these episodic memories where you think, "Oh, okay. This happened to me. This really did happen. And it hurt me. Until I was able to heal, it was really problematic. But now that I heal, I feel more connected to myself." Those are like episodic remembrances.



I remember I was visiting my parents and I was taking the train down to where they live in New York. I went to the museums for the day and then took the train back up. It was at rush hour and the train was packed with people, mostly men in the same color suits. They were either reading, well, they couldn't read newspapers because it was too crowded, but the newspapers were tucked underneath their arms.

All of a sudden, there was this one man that caught my attention. There was no reason for it, at least not that I was aware of, but when I looked at him I felt a very slight warmth in my belly and a lift in my chest. There was no association. We both got off at the same stop, 205th street, the last stop on the D train line. I went up to him and I gently touched his shoulder. My lips opened and the word came out,

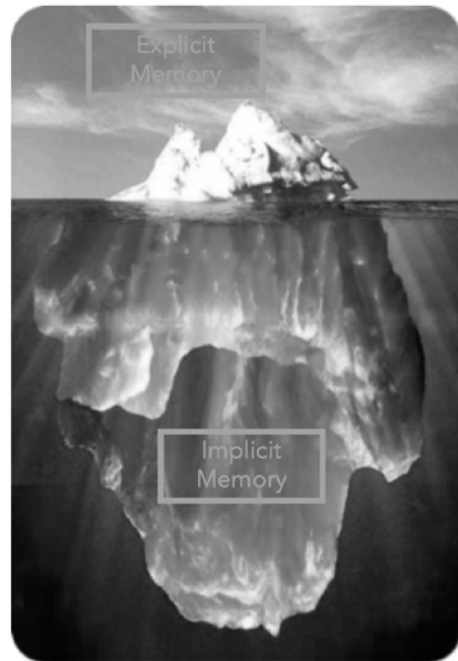
“Arnold.” He looked at me, as astonished as I was, and I said, “Arnold, you were in my first grade class.”

That was more of an episodic memory. It's really important, to be able to work with all of these memories. And my declarative memory allows me, again, to describe all of my implicit and episodic memories in a way that you can hopefully understand.



The explicit memories form this enormous iceberg, the very tip of the iceberg. Primarily the episodic and the declarative memories. The vast iceberg that lies beneath the water line, the one that sunk the Titanic, those are our implicit memories, our procedural and our emotional memories. Again, if we just try to work with the explicit memory, it's going to be extremely limited in how that would affect our return to health.

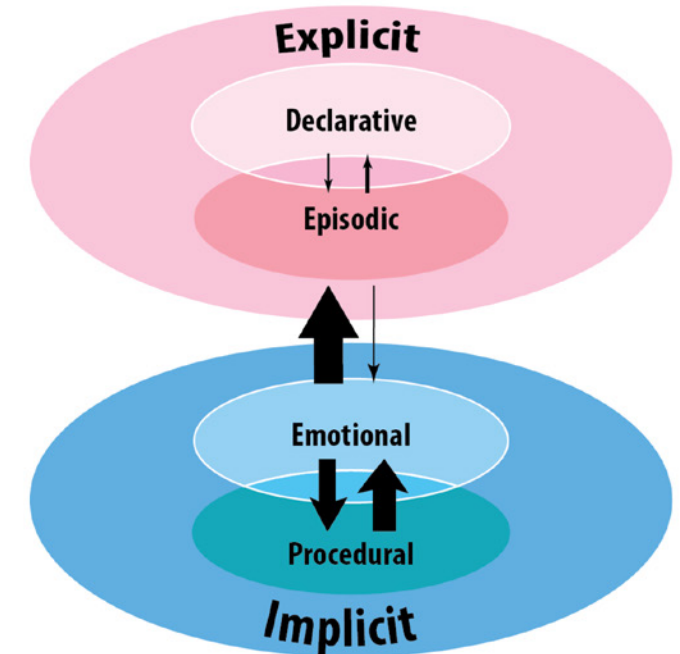
Conscious Memory is only a small part of the Memory banks that drive us.



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Strata of Memory

Trauma and Memory; Brain and Body in a Search for the Living Past



Conscious memory is only one very, very small part. The colors in pink are the explicit memories. The blue colors are the implicit memories. The explicit memories, again, are basically two types: declarative, the memory that I'm using a lot right now, and episodic, the way I was able to weave together what happened to me in my first grade class.

Now, I can make a declarative memory from an episodic memory. You can see one arrow is a little bit wider than the other arrow. The episodic memory has more of an effect on the declarative memory than the declarative memory has on the episodic memory. Then, if we look at the implicit memory, the effect of the implicit memory on the explicit episodic memory is really, really big. It's vast. Again, this is why we need to do bottom up processing.



The effect of the explicit memories, including the episodic memories on the emotional memories and procedural memories is very slight. This is 99%, this is 1% over here. There's a much stronger relationship between the procedural and the emotional memories and a little bit less from the emotional memories and the procedural memories. But the main thing here is that you have this tremendously vast influence of the implicit memories on the explicit.

Once again, and I hope I'm not driving you crazy, this is why bottom up work in trauma is essential, because that's really the only way you can rework those internal body and emotional procedural body and emotional memories, it has to be from the bottom up.

This is what I call the strata memories. Remember the pink are just that tiny part of the iceberg above the water, the blue are that vast part that are below the water line to procedural memories and emotional memories.

This is another thing, and this is somewhat of a repetition, but it bears repetition. The area of our nervous system that we need to be in is what I call adaptive self-regulation. That's also the ventral vagal system. Then we have hyperarousal, which is hypervigilance, flashbacks, the PTSD aspect of trauma. Then we have hypo-arousal, and the hypo-arousal is

the shutdown state where we don't have enough energy to even engage ourselves. What often happens is the person will swing from hyperarousal to hypo-arousal back to hyperarousal then to hypo-arousal, skipping this middle range, which is the adaptive self-regulation, which is where homeostasis lies and our greater capacity for social engagement also.

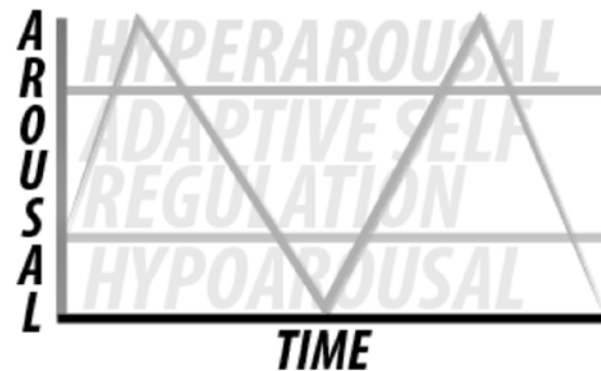
Trauma,
Renegotiation
& Self-Regulation
(Autonomic
Balance)



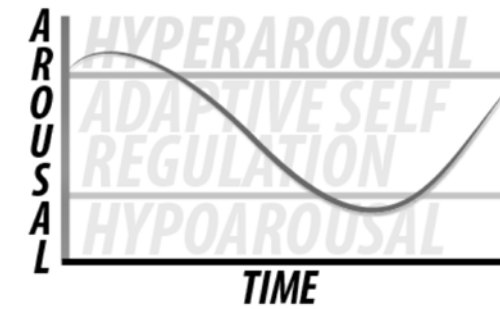
Then we start moving, we now are able to help the client with titration, and pendulation, to move into the hypo-arousal a little bit, then to hyperarousal, and doing this a few times then allows us to return to adaptive self-regulation.

That can only happen through work with the nervous system and through the way the nervous system affects the body and the feedback loops between the body and the brain. This for me is the goal, of when I work with somebody that's been traumatized. This is when I know that my work has been done.

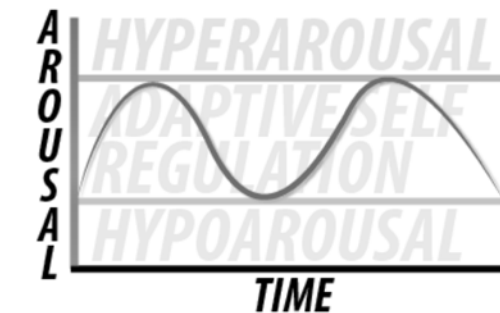
Step 1
Maladaptive
Autonomic
Nervous
System Levels



Step 2
Renegotiation



Step 3
Self
Regulation

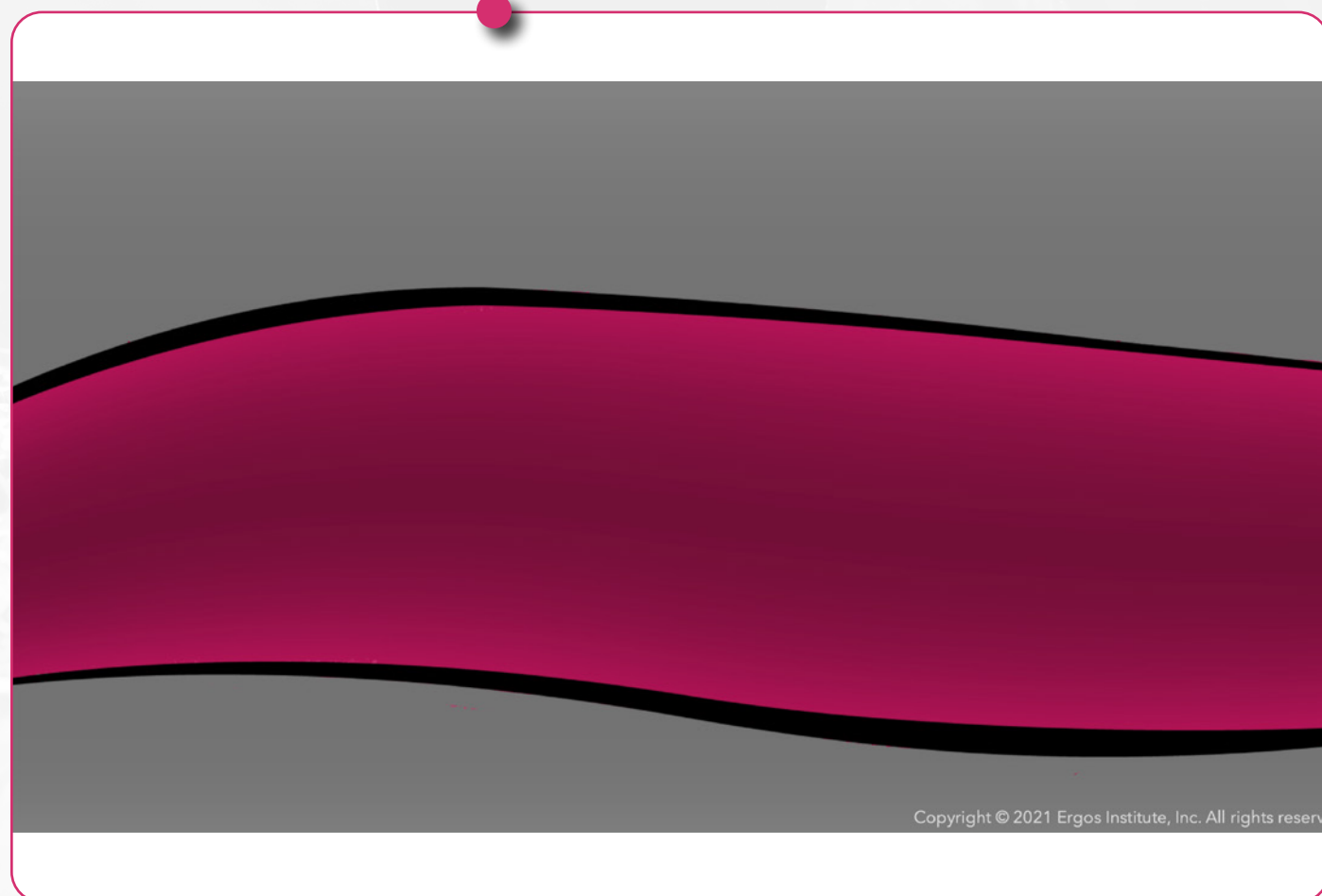


When I first started developing somatic experiencing, it was probably the early seventies, I would meet bi-weekly with a group of Berkeley therapists in my 'tree house' in Wildcat Canyon. I would work

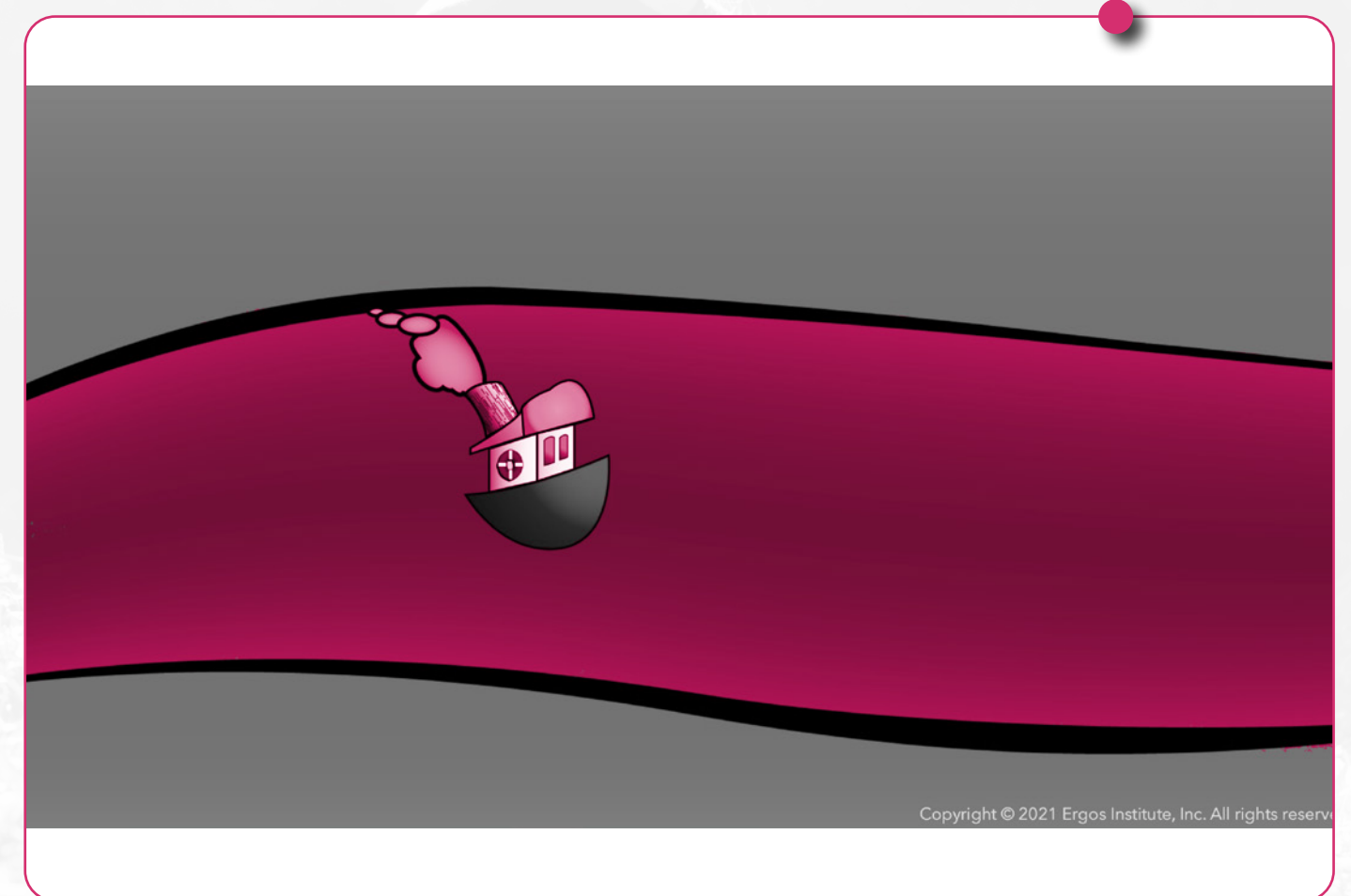
with people, and I was trying to help them understand what I was doing and how I was doing it. And believe me, it was difficult, because I didn't have quite the right language.

During that time, I had the following image come up into my mind, my mind's eye, and that could help understand both what happens in trauma and then how to move through trauma back to awakening and flow.

I call this the stream of life metaphor, but it's actually even a little bit more than a metaphor. What you're seeing here in this image, is the pink in this the stream, the black are the banks of the stream, and the grey are the surroundings of the stream.

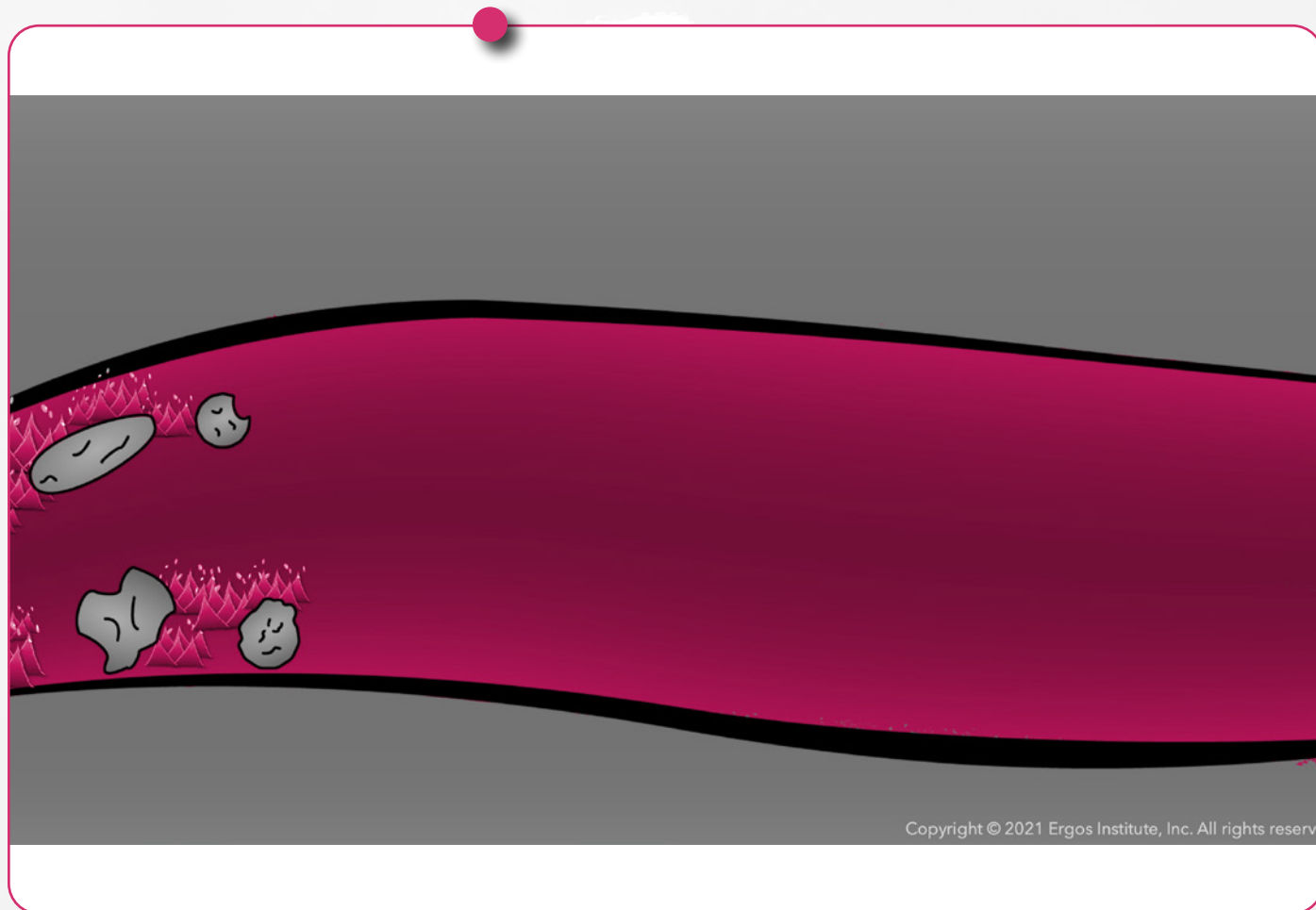


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This boat represents that person, the individual, here the person moves through the stream fully without impediment. They experience the sense of aliveness, vitality.



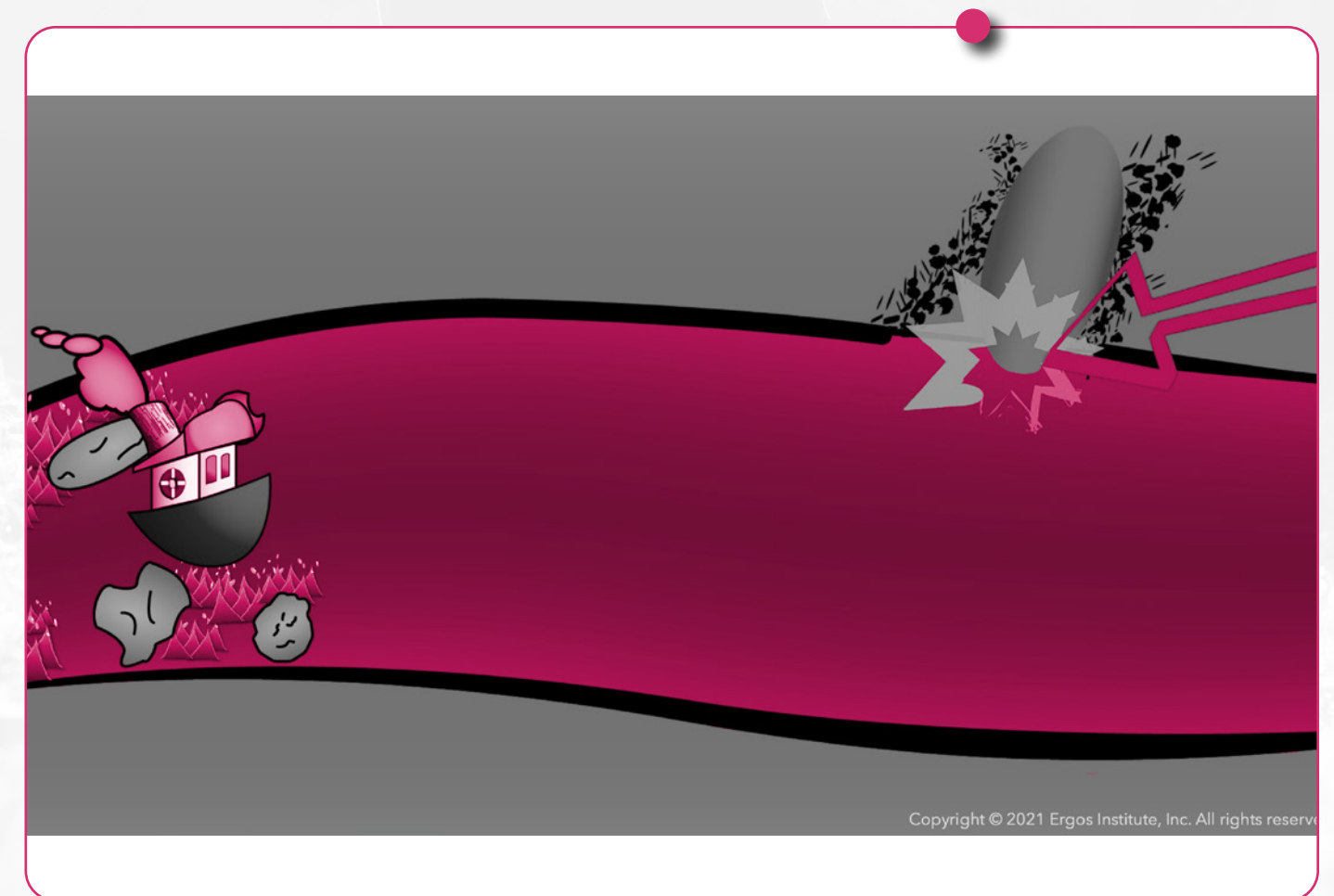
Now, most of us have had different challenges throughout our lives or childhood. That's represented by these stones. They interfere with the flow of movement in the stream, but they don't block it completely. What often happens, is we have these challenges, these stones, and we move through them. There's a little turbulence, but we meet the challenge. And in a way, we need some of those obstacles to have the experience of what it's like to move into greater expansion.

Again, these represent different developmental processes that occur throughout our childhood and even throughout our lives. There's a turbulence, but we can move through them if we've been given accurate or enough support. That's something that as therapists we can often help provide for our clients. So again, there's this constriction as the person boats go through, and then they open up into the wide live stream.

Now something very different happens in trauma. In trauma, it's as though they were forced from the outside and that force ruptured the protective barrier, the banks of the stream. It broke a hole. As a result of that, it formed the vortex outside of the stream. Around 1914, Freud, before he really abandoned his seduction theory and many of his patients, he gave a definition of trauma, which I still hold till today. He said, and I quote, "trauma is a breach in the protective barrier against stimulating stimulation, leading to feelings of overwhelming helplessness."

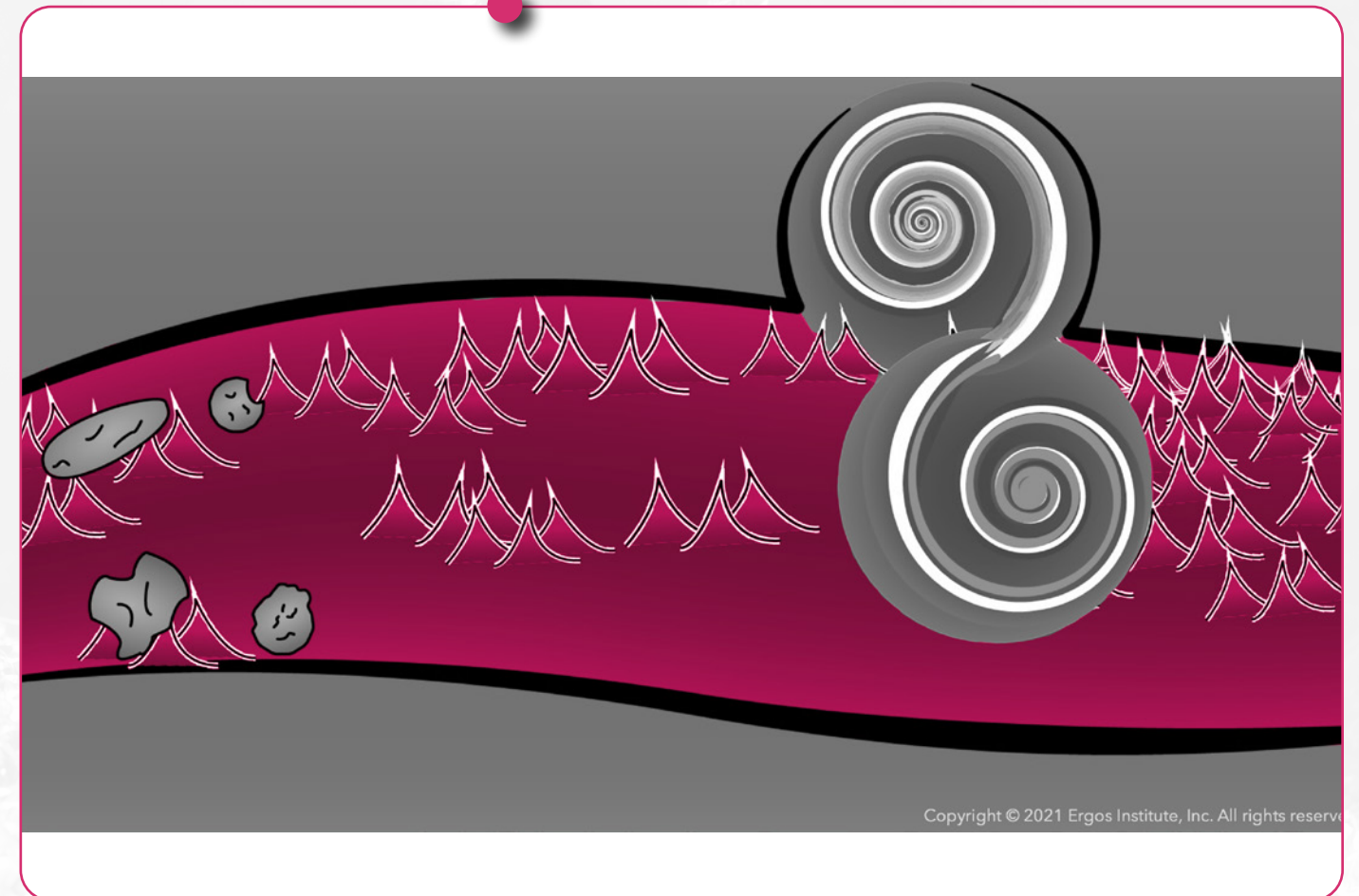
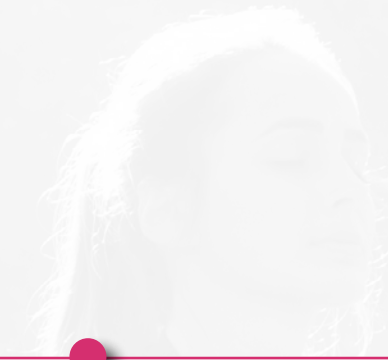
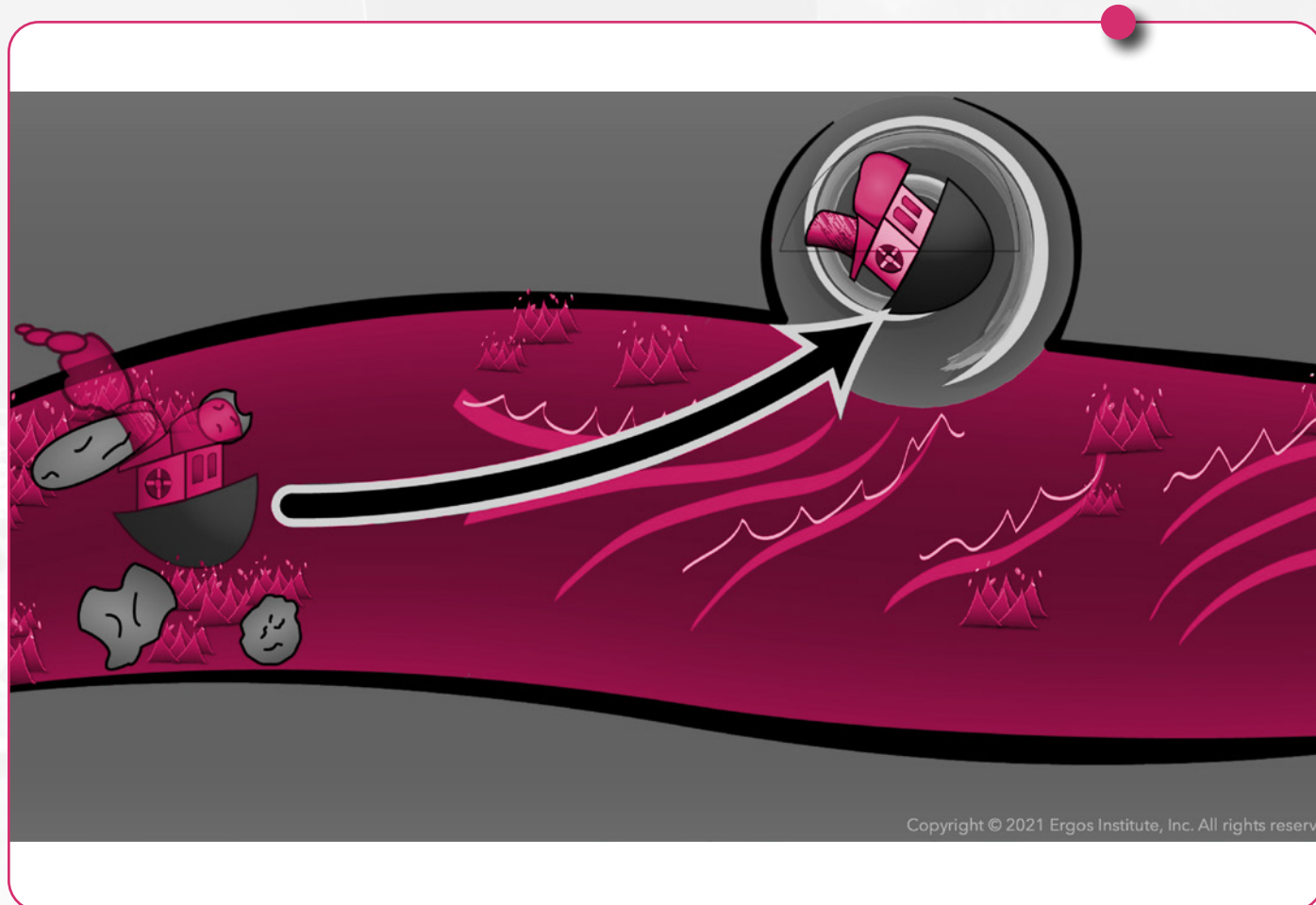
The only thing I would change is trauma is a breach, like you see in the image, a breach in the protective barrier, against over-stimulation, or even under-stimulation, leading to feelings of overwhelming helplessness. As I say, he sadly changed and no longer saw events as causing trauma, but as libidinal impulses within the child's psyche.

So what happens when there's been this breach in the protective barrier against this stimulation, a breach of the banks of the stream?

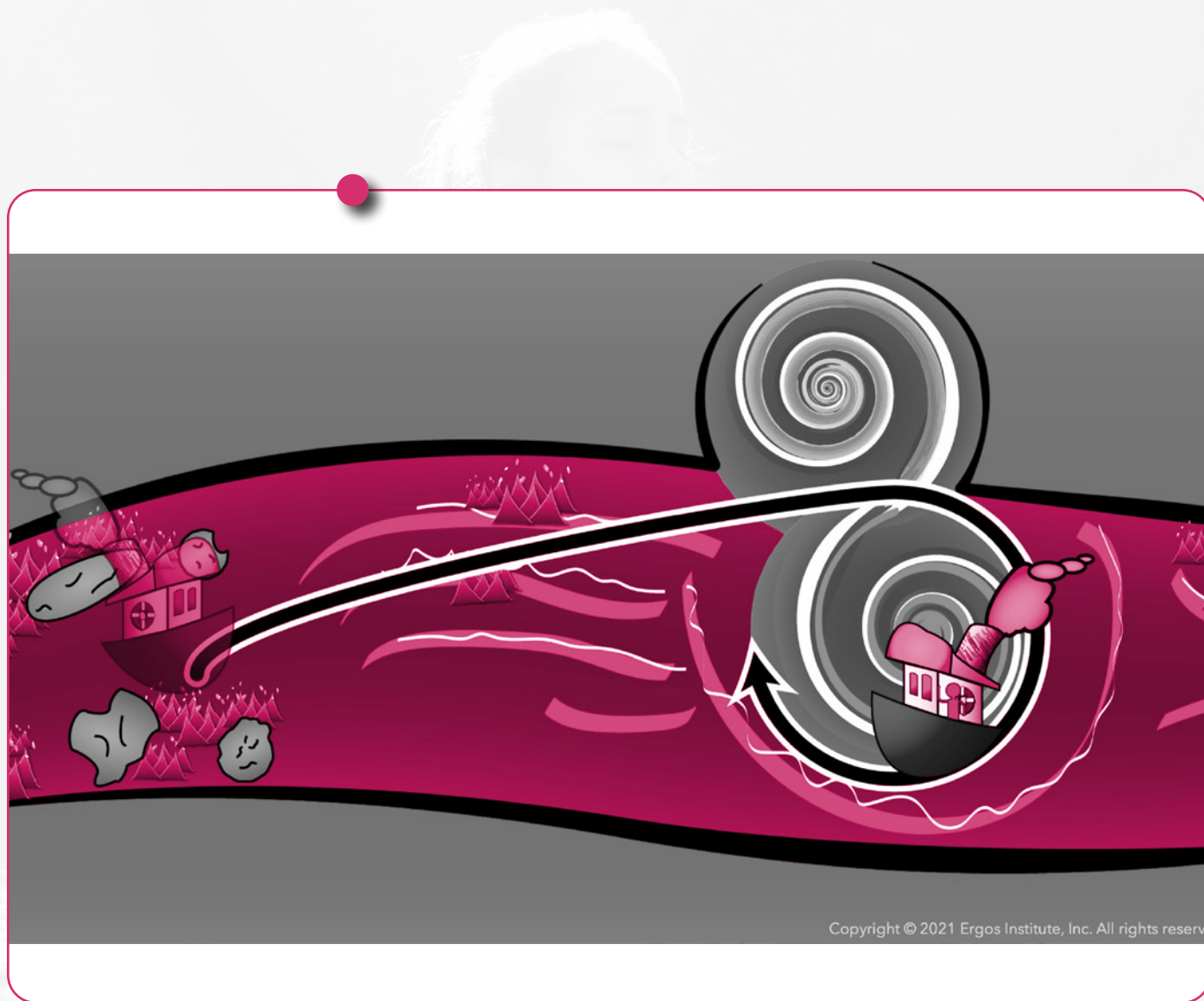


Well, a vortex will form whenever you have a rupture like that, you see a vortex form outside of that mainstream. I call that the trauma vortex. When the person starts moving towards that vortex, what's going to happen is they get sucked into this vortex and spin around and around. That's when people are reliving their traumas, and reactivating their traumas. Now, what people will do after this has been going on for a period of time, they will evolve, or devolve, a strategy to avoid being sucked

into the vortex, into the trauma vortex. What they do, as you can see, is they move as far as they can away from the trauma vortex, so it's not pulling them in and spinning them out. But the consequence of that now is that their stream is only one small amount of the overall stream. So while it prevents the person from going into the trauma vortex, it then vastly reduces their capacity for aliveness and vitality. Neither of those is a helpful solution.



Whenever there's a vortex, in most, and you can see this in nature in many, many, different places, whenever there's a vortex, they will form a counter vortex, a vortex that's spinning in the opposite direction. You can see the relation between the trauma vortex and the counter vortex.

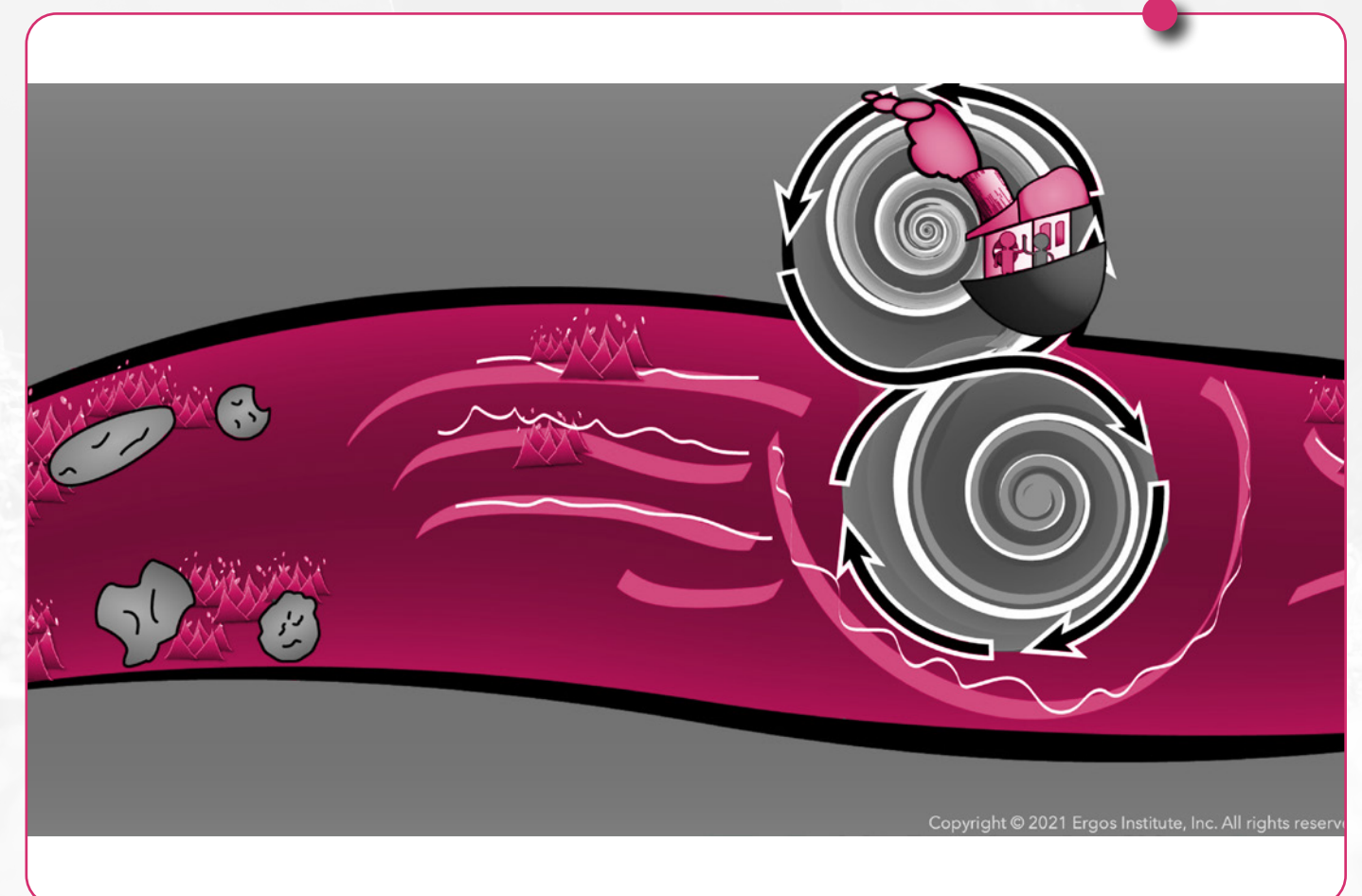


Now when the person moves towards the two of them, with a little guidance, with titration, and with pendulation, you help them move into the counter vortex. The counter vortex is a vortex of expansion, the trauma vortex is a vortex of contraction, of extreme contraction. So what we need to do is move into the expansion, and then

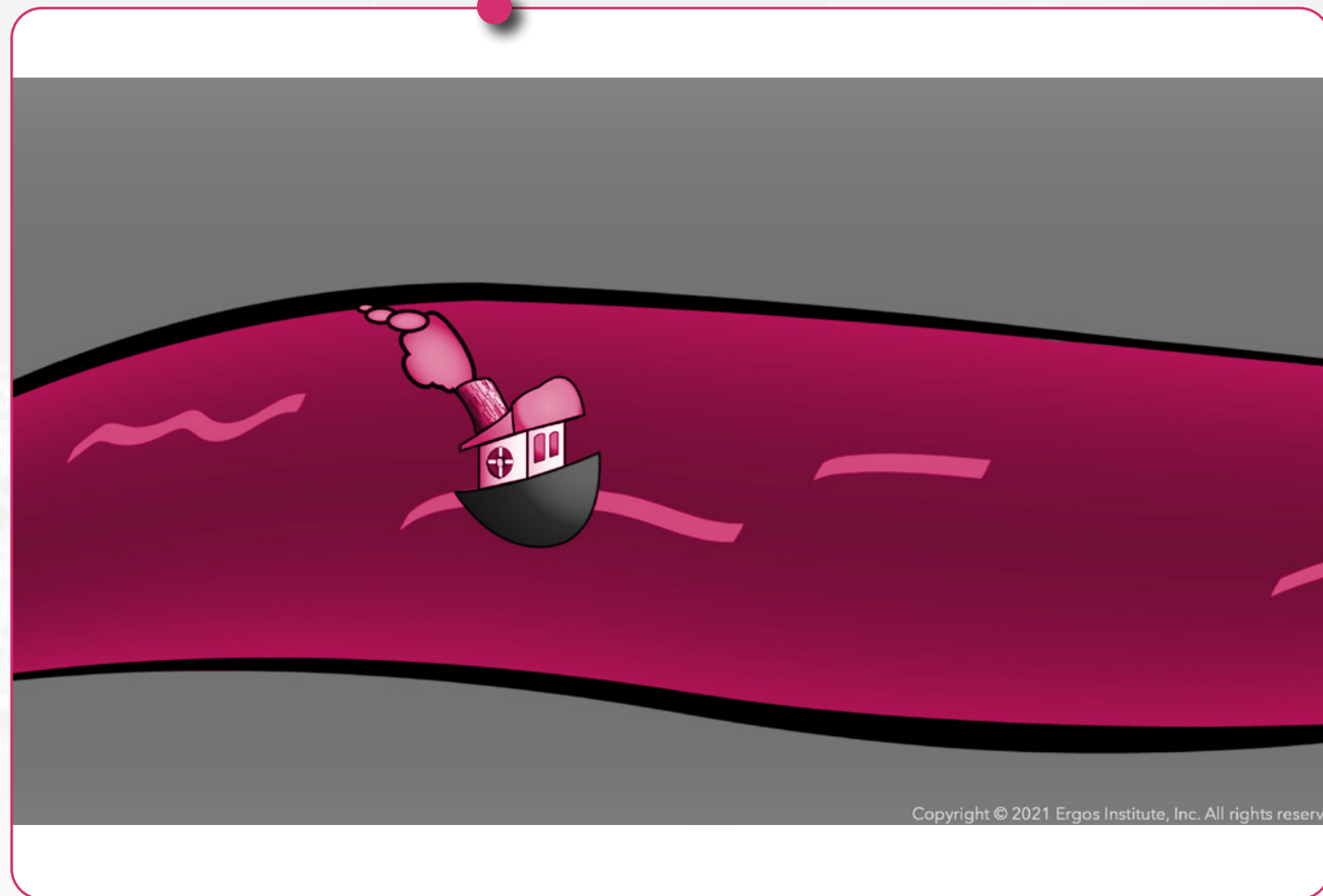
move from the expansion to the outer layer, from the outer layer of the expansion, to the outer layer of the contraction, and then back into the mainstream. And to do this one small amount at a time, instead of going in all at once, you just gradually open that energy and let it go to rest, let it adapt, go to homeostasis.

If you look at this image again, you can see there are two figures right here, what they're doing is they're holding hands together. Each time the person goes around that, they again hold the experience together of contraction and expansion. And this really is the key and reasons why trauma transformed in this way, is transformed. Because when we're able to hold together the effect of these two vortex, we're able to hold together

the contraction and the expansion, and the expansion and contraction, to hold them together and not give either one a preference. You may say, "well why would you want to do that?" Well, obviously the counter vortex is better for you. But it's not really, because again, you can develop this bliss bypass, by not holding together the two realms of experience, contraction and expansion, and then to move them back into the mainstream with full flow restored.



This was what I used to help guide my developing students of what to do, and specifically what not to do. To notice if the person was going into the trauma vortex, to notice if they were in avoidance, to work appropriately with the two of those, and then to move between the trauma vortex and the counter vortex and the counter vortex and the trauma vortex, like a figure 8, and then back into the mainstream. In doing that, then trauma can be transformed. Again, doing this bottom-up work, bottom-up processing, and working with the implicit procedural, emotional memories, the episodic memories as these processes emerge. Then continue back into the mainstream, to be here and now, present, alive, vital.



Peter Levine





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