

Learning to Understand the Language of the Gut

Reflections on Peter Levine's "Tummy Talk"

(from *In an Unspoken Voice, How the Body Releases Trauma and Restores Goodness*)

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Peter writes: "It has long been known that the brain can influence our internal organs. When this process goes awry, one becomes the unfortunate bearer of . . . 'functional' disorders which include high blood pressure, gastrointestinal symptoms, chronic pain, fibromyalgia and migraines, as well as a multitude of other so-called idiopathic diseases." (Idiopathic in medicine means arising spontaneously or from an obscure or unknown cause. Usually, tests show nothing. Doctors say "there's nothing wrong. You're fine." And the patient knows, "No, I'm not fine. Something's very wrong. FIND IT AND FIX IT!!! Now!! From "I'm scared to death I'm dying" or "I'm totally incapacitated" to "I feel awful" and/or "I can't function." Or at the least, "Something's just not working right".)

In the "Tummy Talk" section of Chapter 6, Peter describes the origin in trauma or early childhood adverse experiences (ACEs) of this terrible discrepancy between medical tests and the person's perception of life-threatening, life-altering dis-ease. The heart of the mystery lies in the way the vagus nerve, the second largest nerve in our body (after the spinal cord) brings information from the gastrointestinal system, lungs and heart to the brain, and from the brain to gut, influencing appetite, digestion, assimilation and elimination as well as heart rate, blood pressure, and the quality of breathing – all of which also inform our sense of safety.

The gut-brain – who in the tummy is 'talking' – and to whom?

Embedded in the lining of the walls of the GI tract (a canal almost 30 feet long from esophagus to anus) there is a massive plexus of nerves – sensory, motor and interneurons (Interneurons connect between sensory and motor neurons). This intricate system, the enteric nervous system), contains about the same number of neurons as a cat's brain! Because of its complexity, this nerve plexus has been called the *enteric (gut) brain*. It integrates the digestive and eliminative organs so they function coherently.

"The enteric nervous system is composed of thousands of small ganglia that lie within the walls of the esophagus, stomach, small and large intestines, pancreas, gallbladder and biliary tree, the nerve fibers that connect these ganglia, and nerve fibers that supply the muscle of the gut wall, the mucosal epithelium, arterioles and other effector tissues. Large numbers of neurons are contained in the enteric nervous system, about 200-600 million in human. This is far more neurons than occurs in any other peripheral organ and is similar to the number of neurons in the spinal cord." http://www.scholarpedia.org/article/Enteric_nervous_system

Our three other brains (triune brain) are the **reptilian/instinctual brain (in the brainstem)**, the **mammalian/limbic/emotional brain (hippocampus and amygdala)** and the **primate / rational, thinking neocortex**.

The enteric/gut brain is our oldest brain – and the most recently understood. This is important because, the greater the stress an organism/person is under, the older/more primitive the brain/nervous system that will kick in to ensure survival. When the gut-brain perceives major overwhelming threat, it's reaction is to empty the gut and, if necessary, to freeze – dissociation and immobility are the ultimate preparations for impending doom.

The vagus nerve transmits information from brain to gut (gut-brain) and from gut-brain to the 3 other aspects of our “brain”-brain. What’s so important about this is that 90% of vagus nerve system that connects our guts to our brains is **sensory**. For every one motor nerve fiber that relays commands from brain to gut, there are 9 !! sensory nerves sending information about the state of the viscera (internal organs of the body) from gut to brain. The gut has a lot to say to the brain.

The sensory fibers in the vagus nerve pick up complex and subtle signals in the gut and relay them to the midbrain (limbic/emotional) on up to influence the entire brain. So the “upstairs” brain’s “decisions” are made in response to subliminal signals from the “downstairs”/gut brain. Many of our likes/dislikes, attractions/repulsions, irrational fears and desires come from our “gut reactions” – many more than we realize. And usually below the level of our conscious awareness.

So the gut-brain provides the information that tells “us” whether “we’re” comfortable or uncomfortable, like something or don’t, are afraid or attracted.

The Language of the gut-brain is sensation

“Tummy Talk” – what the gut tells the brain is clearly very important (remember 9:1 nerves going gut to brain)

Our figures of speech reveal the links: performance anxiety feels like “butterflies in the stomach”. Feeling “bilious” or “bitter” (may come with a taste in the mouth) when resentful or cranky, “venting his spleen” is an old one. We still use “gut wrenching” “stomach in a knot” “breath taking”, “heart stopping or breaking”. . . “heavy hearted”, “crushing”, “a crush”, “stiff-necked, straight-laced”, “empty-handed”, “pain in the butt”. But it isn’t all bad: light hearted, open hearted, free as the breeze, my feet have wings, side-splitting laughter – a good belly laugh, a load off my shoulders or chest or back, a spring in my step, sitting on a cloud, chest “swelling with pride” . . .

The good news is due to the fact that the enteric nervous system (gut-brain) also produces many beneficial hormones, including 95% of the serotonin in the body, and thus is “a primary natural medicine factory and warehouse for feel-good hormones.”

How the gut-brain and the sympathetic nervous system help keep us alive:

When the perception of an external threat puts us into high alert, sympathetic arousal (fight/flight) causes our guts to tighten and the motility of the GI system is inhibited. (We then toward constipation.) When the heart needs to pump faster and stronger and the muscles need to tense in readiness for impending action, it’s not a time to be digesting. So all the nerve signals and blood flow that usually go to the guts get rerouted to the heart, lungs, sensory organs, arms and legs.

When threatened with the possibility of being killed, or when the threat is internal (ie: stomach flu or food poisoning), our survival response, coming through the vagus nerve to the GI tract, is to expel the stomach’s content – nausea/vomiting and/or the bowel’s contents – diarrhea. “Scared shitless” may actually lighten a prey animal’s weight and give it a fraction of a second advantage in fleeing a predator. It could mean the difference between life or death.

So we can see that the perception of threat can activate the sympathetic and/or vagus nerves in such a way that they strongly impact the gut (all or parts of that 30 feet).

When survival reactions fail to turn back off:

The activation of these two systems is meant to be brief – in response to acute emergency. However, this activation can become stuck in either sympathetic, fight/flight overdrive – a painfully knotted gut, chronic constipation, or vagal nerve triggered spasms and gut-emptying overactivity. When equilibrium is not restored, the activation becomes chronic, leading to illnesses like irritable bowel syndrome where there may be a combination of sympathetic and vagal hyperactivity - IBS that alternates between constipation and diarrhea.

Peter Levine likens it to a marriage: gut and brain can be in blissful harmony or unending battle – pleasure or misery, heaven and hell.

When the threat comes from within:

Our nervous system assesses threat from the outside environment through our external sense organs. A shadow seen out the corner of the eye leads to a halt in activity and scanning for visual clues to the nature of the shadow. A creaking door leads to many subtle shifts in muscle tension as the angle of the head and neck changes to orient in the direction of the source of the sound.

We also assess threat directly from the state of our viscera (internal organs) and our muscles – our internal sense organs. If our muscles are tense, we (unconsciously, below the level of awareness) interpret these tensions as signaling the presence of danger – even when none actually exists in current time.

Tight muscles in the neck and shoulders may signal the brain that blows are about to land (even if the abuser is long gone and never to return). Tense legs and eyes prepare for escape by running. Taut arms – ready to strike.

Even greater distress comes when the vagus nerve is persistently over-stimulating the viscera -- nausea, twisting guts, muscles collapsing, energy bottomed out, a sense of helplessness and hopelessness. There may no longer be any threat present, but *the churning of the gut itself signals grave threat and dread to the upstairs brain*. This is one way we define trauma: the source of threat is no longer present, but the threat reactions continue.

These intense visceral reactions associated with threat are meant to be temporary. Once the danger has passed, a well-regulated nervous system will stop signaling their activation so equilibrium can return and with it, a sense of well being here and now.

When balance is not restored, acute stress reactions become chronic distress and lead to the un-diagnosable ‘idiopathic’ syndromes with which we began our discussion of ‘Tummy Talk’. It’s important to know that the problem is not “in our heads”. It’s in the way the nervous system sends signals to and interprets signals from the gut.

The way in is the way through and back out:

In order to prevent trauma – or to reverse it when it’s already gotten stuck in the nervous system, we must become aware of the gut sensations; they are vital to experiencing aliveness and for directing our lives – as the source of our intuition. When we ignore our gut instincts we run the risk of starting a battle of wills with our gut brain. Because the gut-brain is at the deepest level of survival, the thinking, planning mind will always lose the war, even if it manages to claim a minor victory or two. (Gabor Maté’s book: *When the Body Says No: Exploring the Stress-Disease Connection* clarifies this dynamic).

When the survival instinct has us in states of immobilization and shutdown, it seems overwhelming to let any of the sensations in our guts get through; we habitually block them from consciousness. This keeps both brain and body snarled up in an “information traffic jam”.

While the way out is to go in and through in order to come back out, this must be done carefully – in a titrated (gradual) way so the system is not retraumatized. Somatic Experiencing offers masterfully gradual, though powerful and empowering ways to work through the blocks and survival states, releasing the information traffic jam so that regulation and function can be restored.

A sound that has a beneficial effect – Voo:

When we open up to chant or sing in a deep resonant lower belly tone, we also open up the chest (heart and lungs) as well as the mouth and throat – stimulating much of the 30 foot tube that is the GI tract. Peter describes chanting as “pleasurably stimulating the many serpentine branches of the vagus nerve.”

He recommends “voo”. (Sufis use “hu”, in yoga, Om (A-o-m with more time spent on ‘a’ and ‘o’, less on ‘m’, which closes the lips and ‘seals’ the sound in a bit more.).

“This sound opens, expands and vibrates the viscera in a way that provides new signals to a shut-down or overstimulated nervous system. . . . make an extended “Vooooooo. . . .” (soft ‘o’ like *ou* in *you*.) As you chant ‘Vooooo’, focus on the vibrations stimulated in the belly as you complete a full expiration of breath.

As you ‘voooooo’, imagine a foghorn in a foggy bay. It’s sounding through the thick, dense, greyness, alerting you as ship’s captain that you are nearing land, guiding you *safely home* – the home within that’s always there even if your parents’ home was not that safe.

The sound vibrations of “voo” enliven sensations from the viscera, while the full expiration of breath produces an optimal balance between oxygen and carbon dioxide. The image reminds us there’s a way through the fog of numbness and dissociation. The foghorn guides lost boats (and souls) back to safe harbor, to home in breath and belly. If you feel silly – great !! Playfulness and laughter break the trance of trauma and bring us back to life and lightness, not by trying, but by spontaneous arising.

How to “Voo”

Begin by finding a safe and comfortable place to sit or stand. Then slowly inhale, pause momentarily, and then, on the out breath, gently utter let “voo” slip out through your lips, sustaining “ooooo” throughout the entire exhalation. Let the sound vibrate as though it’s coming from your belly.

At the end of the breath, pause briefly and *allow* the next breath to slowly fill your belly and chest. When the in-breath feels complete, pause, and again make the “voo” sound on your exhalation until *it* feels complete (no need to force anything at the end). It’s important to *let* sound and breath expire fully, and then to pause and wait for the next breath to enter (to take itself *on its own*) when it is ready. Then focus your attention on your body, primarily on your abdomen, the internal cavity that holds your organs – your GI tract with its amazing intuitive brain, its inner knowing.

It’s important for your observing ego (the fair witness) to abide, present and aware, attending to the sound as it’s directed into the belly. This will evoke particular types sensations. They arise as the body’s innate responses to the sounding and the waiting and the allowing. All are equally

important: voo sound vibrating in the belly, waiting for out-breath to finish, allowing both a pause and for the breath to enter, and staying present and observing.

People report various qualities of vibration and tingling, temperature changes (generally from cold or hot to cool and warm. With a little practice sensing in, you'll generally come to find that these sensations are pleasant, perhaps even pleasurable. Most important, they contradict the raw, irritated, sore or even twisted, agonizing, nauseating, deadening, numbing sensations associated with overwhelm and freeze – the immobility state.

This exercise can be done by yourself and it will initiate gentle positive changes in your sense of safety within your own belly, body and nervous system.

If you have someone you trust to do this with you, you may find there are even more benefits. Doing it together, you may find that you both feel more connected – changing the messages going 9:1 from our gut-brains up to our thinking/feeling brains tends to make us look safer, friendlier and happier to each other.

Be sure to notice how things feel in the “here and now” as they've shifted in response to “Vooing”. Be open to observing anything new as I voo with you. Even if it sounds like a zoo.

Jin Shin Jyutsu Energy Flows – another exercise:

Peter also offers another exercise to help you manage and regulate distressing symptoms of arousal and gut discomfort. If you google “Peter Levine Jin Shin exercises” you will find google books page 128, the Jin Shin Jyutsu Energy Flows. These are arm/hand positions resting/holding on the upper arms and torso. They are helpful for containing arousal and promoting self-compassion and relaxation.

Its best to do first learn to do them at times when you are not upset. Then they will be familiar and comforting to use when you may be more upset or uncomfortable. And of course, do them in a safe and comfortable place.

What you're looking for as you hold these positions for 2 – 10 minutes are sensations of energy flow, muscles softening and letting go, perhaps little twitchings. If relaxing sometimes makes you feel less safe to begin with (this can happen in some types of trauma), then you can open your eyes and look around the room for something that you enjoy looking at. This visual orientation to you're here and now environment sends messages from your eyes to your brain to your body that you are in a secure place where relaxing is safe and appropriate.

The next steps in renegotiating specific traumas that may be making for frightened or terrified tummy ‘cries for help’ :

Unwinding specific traumas that may be contributing to the gut-brain's sense of alarm: When you have had some intensely painful or life threatening illness, medical procedures, accidents, or assaults, your body will have a tangle of impulses to protect yourself, to run, to fight, even to freeze. Underneath freeze, all these muscle memories of wanting to move and defend are still waiting to be completed.

Because these movements often have accompanying feelings that can be very strong, even overwhelming, it's crucial to have skilled help in allowing them to complete safely.

Often there is more than one trauma; they tend to stack up from early times when the lack of a competent protector at home continues internally; it much harder for a child to develop an internal protector without an external role model. So accidents, abuse, illnesses tend to pile up.

Going slowly in the beginning is the safest way in and ultimately the fastest way back out.

A Somatic Experiencing practitioner can help you to unwind the tangled strands of sensations, images, movements, feelings, and interpretations/meanings that constitute the knots with which trauma can tie up our guts, our minds, our energy, and our relationships.

A good SE person will support you to move *slowly* and *gently* through the initial stages of trauma healing. This is to prevent a flood of experience that could be retraumatizing if we go in too far too fast.

The hardest part is to be patient at the beginning while we are reestablishing your nervous system's capacity to settle and expand into a little bit of safety and comfort before greeting the next level of trauma. There, we also do just a little, returning to settle and soak in comfort and a sense of capacity to contain a little more. And then a little more. In, out, in out, each time with a slightly greater capacity to be with the charged experience. Each time, the charge is drained out of the experience a little more. The nervous system is resetting at a lower level of intensity and activation. (Even when it may not feel to the desperation that we've done anything much. Over time, small "islands of safety and comfort" will grow and coalesce into bigger and bigger places to stand and be.)

As hard as it is in the beginning to tolerate that we can't fix it all "right now", it's important to **remember that each little settling, however fleeting, is the beginning of resetting the nervous system's messages from gut-brain to the fight/flight centers in the upstairs brain.**

One key is learning to **allow the capacity for sensing pleasant or neutral sensations in the body** – the arms and legs, fingers and toes, the belly. And **especially for letting the comfortable ones soak in, sink in, land and settle – those islands and harbors of safety wherever they may be in the body. At the end of this article is one such practice for "taking in and expanding (installing) the good":**

Another key is being willing to tolerate a bit of exploration from the new-found and newly claimed safe islands. From those safe harbors, we then sail back out in the direction of the trauma, bringing curiosity and awareness as the amazingly powerful allies that they can be. From a place of safety, we scout out where the waters are still turbulent and where the safe channels are.

And we know when to wait for storms to subside. Knowing that from the safe harbors and with the knowledge of the safe channels, we can navigate most waters safely.

The wonderful thing about the nervous system is that as the holding capacity of the nervous system increases, the strength of the storms actually decreases. Pressures on the "fault lines" are released. Fewer big earthquakes and fewer tsunamis. The boat of the nervous system will be able to sail most storms and return to most harbors.

For a wonderful description of how Peter Levine was able to use SE to navigate the 'earthquake' of his being hit by a car in a crosswalk, please see: www.psychotherapy.net/interview/interview-

[peter-levine#section-a-personal-experience-of-trauma](#) – click on **A Personal Experience of Trauma** to access the whole article.

I hope this helps your understanding of SE and I wish you the best in your healing journey.

Lela

Rick Hanson describes the three important steps that turn momentary positive experience into beneficial long-term change. (How to awaken joy more deeply, more 'solidly'.)

Three steps to notice, focus, and install the good

Good experiences are often fleeting – (we can help) them to last and grow

- 1: "If people repeatedly (a half dozen times a day, thirty seconds at a time – that's three minutes or so a day) notice a good experience that is already happening, or skillfully create a positive experience, then that's the doorway into building up a key resource inside. Under either condition, you start with a positive experience. That is step one. You have to light the fire.
- 2: Once you get it going, step two is to add logs to the fire. Stay with the experience. Give it to yourself. Be with it. Let it last ten/twenty/thirty seconds in a row. *(It takes around 30 seconds for an experience to really register in the brain/body/mind) enough to have a lasting impact.)*

Help the experience fill your body. Move out of the concept. Bring it down into your body, your emotions – because that is mostly where we're wounded. Help the experience become real for you.

- 3: In the third step, like warming yourself by the fire, absorb this positive experience. Prime the memory systems; sensitize the memory system by intending and sensing that the positive experience is going into you.

These are the three basic steps of taking in the good.