The Autonomic Nervous System and Rolfing® SI

Clinical Considerations and Application

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ABSTRACT *In this article, Pedro Prado, PhD, brings to the fore the importance of the autonomic nervous system (ANS) for Rolfing theory and practice. The psychobiologic perspective of the work expands its assessment tools by making use of the work of Peter Levine, PhD (Somatic Experiencing®) and Stephen Porges, PhD (polyvagal theory). Prado presents these theories and makes correlations that can be useful for the practical application of SI.*

Author's note: The material presented in this article is intended as guidance to navigate the interface between the autonomic nervous system (ANS) and our Rolfing Structural Integration (SI) interventions. We are always affecting the ANS with our work, but should you have an interest in specifically managing ANS defensive states and unresolved trauma, it is imperative that you seek further training, such as in Somatic Experiencing®. Always stay within your scope of practice and training.

More and more attention has been given to the nature, the function, and the role of the autonomic nervous system (ANS) in Rolfing Structural Integration (SI) practice, and the ANS and its consequences for manipulation and for the work of SI in its various aspects is getting more attention in the Dr. Ida Rolf Institute® (DIRI) curriculum. These considerations fit well with the psychobiological perspective in Rolfing SI. We have an array of somatic, observable tool for Rolfers® to access their clients and strategize the work. I invite the reader to consider how much can we integrate ANS knowledge and through that unfold more possibilities to develop our clinical work.

Before identifying trends for our future work, it's important to consider the groundwork already laid with the work

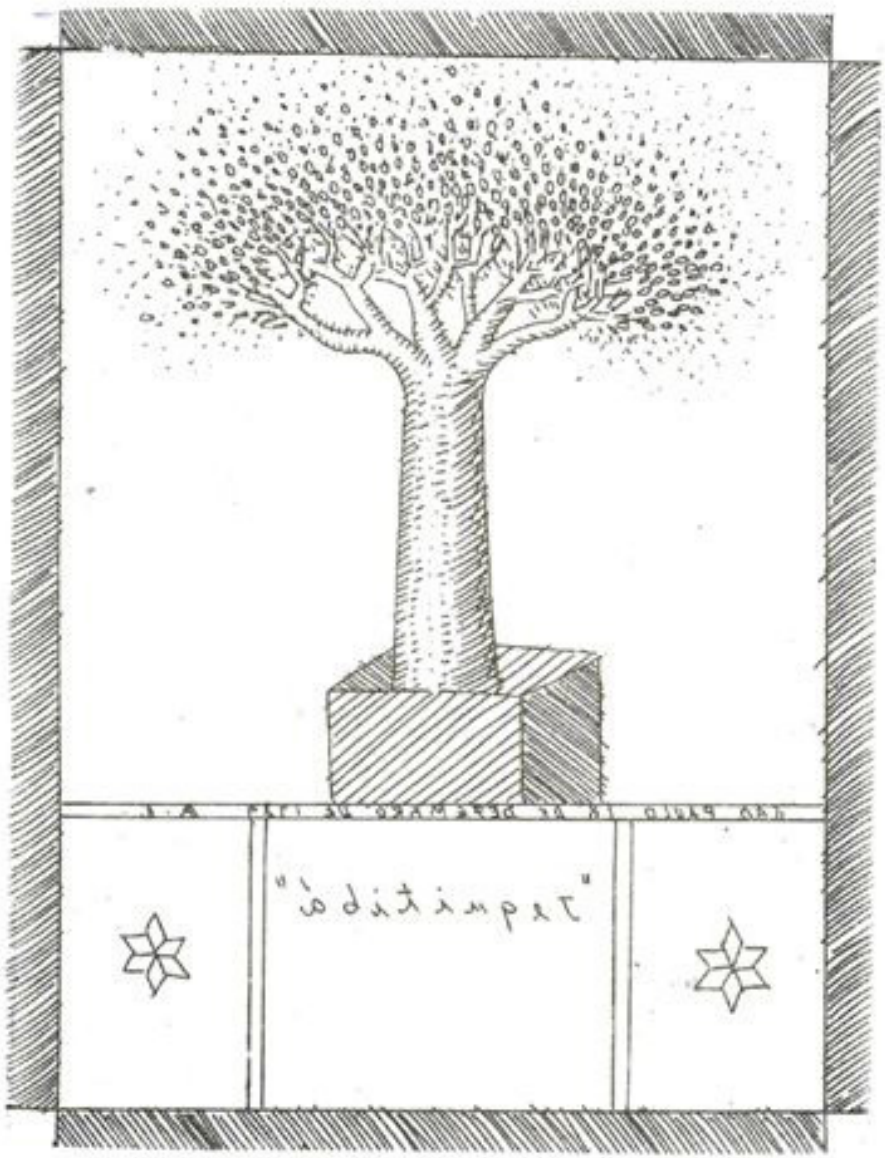
of Dr. Peter Levine and Dr. Stephen Porges considering ANS function and ANS observation. Levine, a clinical psychologist, humanist, and scientist was trained as a Rolfer by Dr. Rolf in the early 1970s, and he then developed Somatic Experiencing® (SE), a somatic approach to healing trauma based in classical ANS functions. Porges, in turn, innovated polyvagal theory, another powerful entry point for somatic practitioners. The work of these two pioneers interfaces, and Levine draws from polyvagal theory in his SE methodology. The shared essence of their perspectives is that trauma and its consequences lay not in the traumatic events but in dysregulation of the reciprocal functioning of the ANS branches. ANS reactions to the events of our lives can build patterns in the myofascial web, affecting the organization of the structure in gravity and its transformation. Thus, ANS awareness is a crucial variable to be considered in our work. In this article I will try to present the essence of these theories and make some correlations with Rolfing SI.

> Trauma is in the nervous system, not in the event (Levine 2021).

The Nature of the ANS

The ANS regulates our interaction with the environment, internal and external, seeking homeostasis – the relatively stable state of equilibrium present when the conditions of safety are experienced. The ANS is a mediator of physiological functions in the body and also has a relational function. It regulates well-being as well as protection, survival, and maintenance of life of the individual and ultimately the species. The ANS has a crucial function as an 'alarm system' that triggers and regulates all other bodily systems. In every moment, the nervous system is involved in an evaluation of internal and external sensation, the degree of threat experienced, and the perception of danger and/or safety. Whichever of these aspects the person is focused on – physical, emotional, or rational – and whatever the response is – orienting, flight, fight, or even freeze – an unconscious evaluation of threat and/or safety is occurring reflexively and shaping the body and its myofascial web.

This ANS regulatory function is directly involved in the behavior of the individual and how they move towards pleasure and well-being as well as how they deal with



threat or fear, and these choices ultimately build patterns. Our Rolfing work often unlocks ANS-patterned processes, which is welcomed as this is a crucial avenue to restore, educate, and promote the client's balance in gravity. ANS awareness helps transformation because a client's general behavior and patterns (postural, emotional, and cognitive) have encoded within them their stress responses to trauma as well as ANS functioning in the wide range of activities in daily life. Just as being trauma-informed enhances our work, being ANS-informed enhances our understanding of how form and structure 'happen'.

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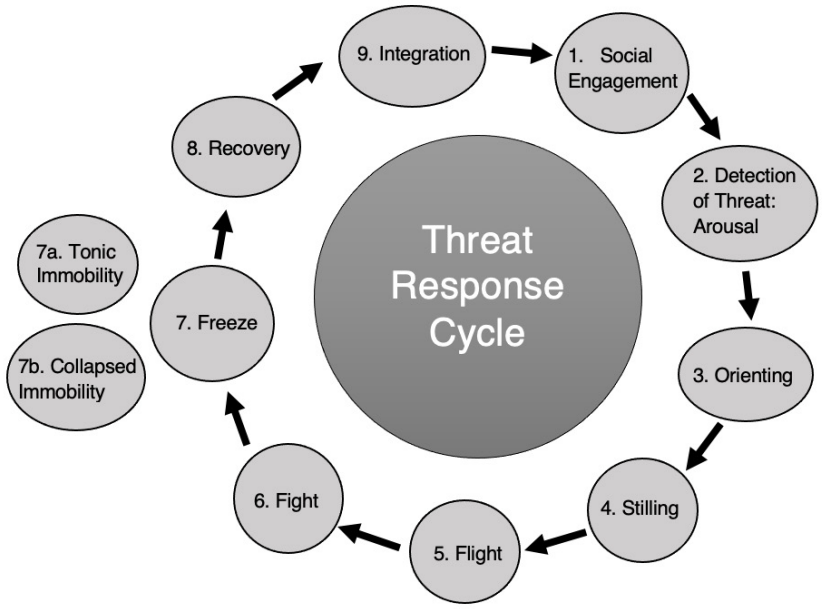

Figure 1: Threat response cycle (based on Changaris 2016).

The ANS and Survival

The two branches of the ANS are the sympathetic nervous system, responsible for increased arousal states, and the parasympathetic nervous system, responsible for relaxation. The relationship between the branches is traditionally described as reciprocal; that is to say, when one branch is the dominant state, we could say it is high tone, then the other has low neural tone. This reciprocal function model allows us to understand many of the patterns we find in a person's behavior, and it also lends understanding to structure. Sympathetic and parasympathetic reciprocal functioning is thus an omnipresent feature during Rolfing work.

Threat Response Cycle and the ANS

The threat response cycle speaks to how the ANS fluidly moves through stages of response and integration in optimal circumstances (see Figure 1). From a healthy state of *being alert* (homeostasis), internal or external stimulation can move our physiology to a small amount sympathetic activity (*arousal*) when a threat is detected. Depending on the intensity or unexpectedness of the stimulation, the person's nervous system may have a *startle* response, where our orienting and interpretation of the stimulus looks for adequate ways to respond. We then move into our array of *defense responses* which includes facing or withdrawing from the stimulation, with the organism mobilized for flight, fight, and/or freeze. When this arousal moves to execution of an action, all the charge that has built up can be *discharged*. Thus, when the threat is managed successfully, the sympathetic charge is replaced by parasympathetic action (reciprocal response), which is the recovery and integration phase of the threat response cycle. This appropriate reciprocal functioning of the two branches of the ANS returns the organism to a state of rest and balance, giving the person a chance to *reorient* to reality.

The ANS can get dysregulated at any stage of this cycle, generating fixations. Another way of saying it is that an unsuccessful response at any step can create an experience of nervous system stasis: the fluid movement has been arrested. It is of particular interest for our work when a person's nervous system has mobilized to attempt to flee or to fight, but the action was not executed. *Freeze* occurs when a further layer of protection is needed, where the parasympathetic state can take the form of *dissociation* or of *immobilization*. Interestingly, a freeze state can present as high tone in the myofascial system (*tonic immobility*), or as the absence of muscle tone (*collapsed immobility*). Interruption of the threat response cycle can persist past the event and establish structural patterns based on the fixated ANS state. If this persists long enough, these states will become traits. As an example, a person could perceive a continuous state of threat, with associated pain because of the holding in the body from unresolved actions. Survival energy is running in the body and hormonal system, resulting in continuous holding (tension) in activated regions of the body and the overproduction of stress hormones.

This physiological activity of the ANS comes together with feelings and emotions, then meanings about the situation are built into personal narratives and further stored in our complex memory circuits. This has survival value: when similar stimulation occurs, memory will be accessed. If the event that triggered the original defenses was successfully resolved, this knowledge can be used in a new orientation to the world. If the defenses were not successful in preventing harm, there can be multiple ways to get 'hooked' in the ANS processes. Thus, the experience may wobble through many levels and engage multiple systems; we are talking about many neurological circuits.

Let's take a tour of some of these different phases and analyze how is it that Rolfing SI can affect the threat response cycle.

Orientation

Orienting is a key function to organizing posture and our interaction with the world, it is where our awareness is directed to our senses, emotions, and intellect. It all starts in the womb where the fetus explores and builds a two-directional orienting system (orienting internally to self and orienting externally to mother). After birth, the infant integrates the sensorial experience of weight into having a sense of ground and an outward sense of space around them. Babies build a sensorial map, a body schema, structuring the first layers of identity, which also builds a sense of safety in gravity and in one's own sensorial body. In an emotional layer, the fetus experiences a connection with the mother, where emotional ties are experienced and are part of the formation of the ANS. The reciprocity of the ANS branches is not fully formed at birth and continues modulating with the relationship of the newborn and the caregivers.

This sensorial sense of safety combined with its emotional experience will provide a

base for one's somatopsychic and structural development. This is the foundation for eventually building subjectivity resulting from one's experience and the many filters one builds along the life span. These lenses are stored in the memory system and will shape orienting in the present. When a person is safe in their body, safe with self, they are more likely to have continuous orientation to the internal and external reality – and thus have the security to relate to self and others. Movement becomes free expression from the self. Orientation is not only a physical event; it is also a perceptual event that builds the coordination system. It includes emotional and worldview perspectives that are also manifested in our myofascial web.

How do we orient ourselves? To pleasure? To pain? Which emotions do we avoid, which ones do we look for? What set of values do we organize around? And how does the body behave around these variables? The myofascial web mediates these orienting tendencies. It anchors emotions, choices, and personal conditions. Orienting is a natural function. It is so much more than what we look at and what we listen to. It speaks to protection, to adaptation, and to expression. Embedded in the natural function of survival are "Who am I?," "Where am I?," and "How can I deal with the complexity of what I want to express into the world?" In Rolfing SI, we are concerned with orienting to these multidimensional elements of the human life force.

Rolfing SI and Orientation

Let's take this into practice. We just talked about the importance of orientation in the formation of identity, movement patterns, and emotional adaptation to life. Preferences and possibilities shape the client's relationship to gravity. The Rolfer may perceive the client's patterns of orientation during the initial interview for a session or series, in the body reading and movement analysis, and can then work to include missing dimensions. When vectors of orientation (be it in physical or emotional layers) are missing as a result of traumatic past experiences or as a result of interrupted development, posture gets altered.

We can explore vectors of orientation using Rolf Movement® and psychobiological approaches; the ensuing ANS responses help us understand how well the client is integrating the experience, which helps us track the intervention and anchor the new possibilities in the flesh. As an example, if you heighten the client's awareness along the ground/space dimension, observe their ANS responses. By inviting clients to expand into different vectors of perception, they make contact with the missing piece, and the new possibility may be observable in the ANS. Does it bring in sympathetic activation? Does it bring an experience of safety in one's body, with a balancing of the sympathetic/parasympathetic?

Orientation is neither a single perceptual event nor simply physical; it includes as well perceptual and emotional tendencies that shape the client's movement and posture. Thus, it is beneficial to devote some attention to the emotional and worldview aspects involved in orientation as they are 'downstream' from the ANS physiology. Is the client organizing around avoiding feelings? Is the client moved by helping someone else? What are their values and how do they structure their pre-movement and attitudes? Do they believe they can succeed in a certain endeavor? Can they look to the world from a different perspective (e.g., head up, chest responding to the breath)? In this way, the ANS offers observable physiological cues that we can use to consciously track its function and its relationship to the Rolfing process.

Defensive Responses

The minute one feels unsafe, defenses are triggered, sympathetic activation comes to the forefront, muscles are recruited, muscles constrict, and the relationship to gravity gets transformed. Body and movement patterns change, and defensive responses from the nervous system are installed. These defenses can get locked in the body/posture as unfinished responses, and this will also be revealed in the client's behavior. Gestures of expression may be completed . . . or not. The person may have completed the hug, the punch, the running away . . . or not. The fascial system is recruited, to monitor internal events that may have triggered the alert, or perhaps to defend by changing the internal environment (e.g., tightening up if an internal experience of emotion is too strong). Tight fascia can thus be a response to an emotional threat, an adaptation where the the system constricts in order to contain emotional overwhelm.

Rolfing SI and Defensive Responses

As we turn to practice, to the relationship between our Rolfing work and the defensive responses, remember that touch is more than a mechanical feature; it is information. When we touch the myofascia, we are directly *affecting muscle tone*: vectorized touch connects sensory neural input and the state of muscle tone. When we relate to muscle tone, we are effectively working with any incomplete ANS defensive responses locked in the body. *Discharges may happen*, and we need to follow the rhythm of the ANS so as not to overstimulate the system – which would only enhance constriction in the defensive, sympathetic mode. However, the client's nervous system has intelligence and wants to complete the threat cycle, to restore homeostasis; when correctly met, paced, and titrated, discharges like trembling and big exhalations can be part of the nervous system reregulation, a restoration of the reciprocity of the ANS.

It is important for clients to understand that this may be part of their Ten Series or other Rolfing process. If the process happens unconsciously, the client may feel relieved, but this may not complete the cycle. Sometimes *emotions and memories* show up, as many of you have witnessed in your practices, and we need to encourage or gently invite the client to experience the possibility of completing arrested responses. If the client feels safe enough to renegotiate these elements, they may leave with a new memory-bank response that will allow fluid flow at the next threat response. (As noted at the start of the article, this is intended as guidance

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to help you with what may come up in your Rolfing practice. It is *not* a substitute for training in SE or polyvagal theory.

Intention and the premovement are elements that we look for in using Rolf Movement and psychobiological techniques. An incomplete threat response carries intention that did not successfully manifest. Consider also premovement and orientation, which organize and precede movement by reorganizing structure and function in gravity. Thus, any action is preceded by orientation and builds an intention in the muscles, perhaps even a new neural network is recruited in advance of the final gesture. When guiding clients to sense intentions and premovement organization, they can track their perception and the organization of their gestures, and we can simultaneously address the ANS state. ANS function underlies intention. You will often see freeze (contraction or collapse) as part of a gesture that will relate to orientation and expression. Using either touch or Rolf Movement techniques, we can guide the client to perception of the intention held in the contraction or collapse responses, and may then observe signs of ANS charge or discharge as signals that the defense response is completing. Oftentimes the client is unaware of these signs, yet other times they are clearly conscious of what happens.

Rolfers have the choice to work with ANS defensive responses through interventions that consciously and directly connect with the client or through those that are unconscious and indirect. When we pace the session to have small, titrated doses of discomfort or charge in the tissues, we are working with the unconscious ANS. The changes will mainly be somatic. If we consciously help the client engage with the meaning of the experience, then memory of these interrupted threat response elements will be recaptured and renegotiated. We can work both ways, consciously or not; again, one's training is a consideration. Conscious presence with somatic discharges will build a sense of containment and the experience will have edges, which can be important for reestablishing the power lost in a traumatic situation. This can be easier for the client to integrate. The integration will depend on the readiness of the whole system. As these transformations take place, the structure may display a new use of movement in gravity.

Talking about the decisions a Rolfer makes brings in the relational field between the Rolfer and the client. The scope of the relationship goes beyond the use of techniques: resonance and therapeutic relationship are key concepts for the work. How do the defensive responses operate in the relationship? This one question has the possibility of opening a huge dimension. Also, is the client's nervous system open for contact? Is the client avoiding contact? Can the Rolfer help regulate the client's ANS? When a threat response finds completion, how does that change the relationship in the present moment?

If we do not consider ANS function as we work, we may not be able to resolve underlying states, meaning interrupted defensive strategies would remain in place. That is to say, the deeper survival mechanisms are still operating and are not transformed through the stages of the threat response cycle. These patterns then remain anchored in the fascial web, perhaps even more intractably, affecting the person's structural relationship with gravity. This speaks to the importance of the ANS for our work, but it is also important that the therapeutic relationship be strong and that the Rolfer be working from training and appropriate scope of practice when consciously engaging with the threat response cycle.

Reorientation

When we are not held in a defensive state or oriented towards danger, we can experience safety that allows the parasympathetic function to come forward, balancing out the energy-expensive sympathetic activation of defense in a process of integration and reorientation. The attributes of a physical sense of safety are many but may include longer breath cycles, more ease in the myofascial system, and the person being able to stay present with sensations in their whole body. The emotional experience of safety is that one has sufficient resources for the situation at hand and the ability to contain and deal with the experience. In these conditions, the ANS finds resiliency and homeostasis, and this is expressed through the whole structure. Thus, when a threat response cycle completes, the individual can reorient and relate from a safe place, socially engaged and ready for novelty, for what comes next, not trapped in past experiences that manifest as defensive states in the present and projected on the future.

Rolfing SI and Reorientation

In Rolfing sessions, we can recognize and observe this reorienting, integration, and stability and track it through observable ANS states. A wealth of information is available in the face, eyes, eye contact, facial muscles, and gestures. We can hear it also in the client's tone of voice, and in what they are saying or not saying. Whole-body gestures that display safety show a shoulder girdle at ease, hands and feet that don't grip, and an appearance of resting down into the pelvis and feet. We can ask orienting questions. How safe do you feel inside? How are you standing in gravity and relating to it? How are you breathing? How does it feel to relate? This is important work to recognize the reorientation that has happened and it honors the closure of

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When the vagus nerve sends high tone signals to the heart, it is slowing the heart down, but polyvagal theory tells us that this can happen under two different conditions: in one, the client in a state of rest and stillness because they are experiencing safety and reorientation; in the other, the stillness is because the person is immobilized by fear. Rolfers need to recognize how to tell them apart, because the two can both look restful.

the threat response cycle. Closure also includes the rebalancing of ANS activity in a healthy pulsation and tracking this experience of the client in gravity. These pieces fortify the integration of the myofascial net and bring about the completion of the client owning the changes. It has been my observation Rolfers often don't allow enough time for this process.

Now that you have a sense of the importance of the ANS to our work, and that working the ANS-Rolfing interface strengthens our clinical results, let's dive deeper into the knowledge base of ANS functioning, particularly the work of Stephen Porges (polyvagal theory) and Peter Levine (SE). Resources for training are listed at the end of this article.

Porges, the Polyvagal Theory, and Rolfing SI

Stephen Porges, PhD, is a neurobiological researcher who brought forward polyvagal theory. (Editor's note: you can read an interview with Porges on page 18.) His work adds another variable to the quest of safety and reorientation. Porges coined the term *neuroception*, which describes the broad function of the polyvagal system together with other neural circuits, that is to say a person's nervous system is always scanning for safety, both with their external environment and their internal environment. He brilliantly considers this is due to evolution of the ANS and postulates that the *vagus* nerve, the tenth cranial nerve is in large part responsible for the main parasympathetic action involved in the threat response cycle. Porges has described that the vagus nerve has two very distinct efferent neural pathways (neural signal traveling from the brainstem to the body). Although the vagus nerve innervates many anatomical structures, we often consider the innervation of the heart to be one of its primary destinations, and we are here going to use the heart as an indicator of generalized vagal function. When the vagus nerve sends high tone signals to the heart, it is slowing the heart down, but polyvagal theory tells us that this can happen under two different conditions: in one, the client in a state of rest and stillness because they are experiencing safety and reorientation; in the other, the stillness is because the person is immobilized by fear. Rolfers need to recognize how to tell them apart, because the two can both look restful.

The polyvagal theory describes a primitive, ancient branch of the vagus nerve called the *dorsal vagal system*, but mammals also have a second vagal nerve branch, the *ventral vagal system*, which is myelinated, fast in its nerve impulse speed. One of the functions of the ventral vagus system is modulating social engagement, because brainstem control of the ventral vagal nerve is adjacent to brainstem control of cranial nerves responsible for facial expressions and vocal tone. Researchers find that when a person is engaging in prosocial communication with their face and voice, their ventral vagus nerve is functioning more dominantly. They are at rest. Control of the dorsal vagal nerve branch is also in the brainstem, but it is not associated with social engagement; in fact, the absences of social-engagement cues in the face and head indicates that the dorsal vagal system may be more dominant. Ventral vagal dominance brings in the higher function to the ANS or, said another way, ventral vagal function allows an experience of the present and brings forward restful states connected to safety. This includes relationships with others and one's environment.

Ventral vagal activity can regulate sympathetic activity: when the ventral vagus is 'on', sympathetic activation of the heart is inhibited. But when the nervous system detects a threat, the ventral vagus will turn its neural signals 'off', which automatically and quickly allows sympathetic mobilization towards defense. This takes us back to the threat response cycle described earlier, where the person moves through the possible responses to threat: fight, flight, and – when a threat is too big for the system – freeze. The immobility of the freeze response comes from the dorsal vagal nerve; it is an old and successful survival mechanism to keep the alarming activation in the person's body down, with freeze and dissociation offering protection during overwhelming traumatic events. Porges calls this dorsal vagal state *immobilization with fear*. This is in contrast to the immobilization that comes with ventral vagal states, where the immobilization is a stillness and rest associated with connection, communication, and safety.

Polyvagal theory demonstrates that the sympathetic and parasympathetic nervous systems are not exactly in a reciprocal relationship; it is not as simple as when one is up the other is down. In truth, there is a hierarchical arrangement of engagement of these three ANS responses to deal with threats. At the first tier, a person may be living life with mostly ventral vagal states: they have sufficient sympathetic activation for engagement (e.g., run to catch the bus), they have parasympathetic action (can catch their breath once on the bus), and this modulates social engagement (able to say hello to the bus driver). A second tier is when threat responses are triggered, sympathetic activity increases without their conscious control and will raise their heart rate. This change will happen to different degrees as the brain modulates the rise according the perception of

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threats that are present and the history of threat the person has experienced in the past. High heart rates and generalized mobilization may be successful in the person running away from the threat, or maybe they are able to push away the problem. But when fight and flight are not successful or not possible, then the third tier is the last resource of the vagus nerve coming online: the dorsal vagal parasympathetic nerve fibers become engaged to dampen sympathetic activation and may take the person to a state of freeze and/or dissociation.

This brings forward a very important element for Rolfers to consider, what to do when freeze and/or dissociation is present with our client. When the dorsal vagal fibers are engaged, remember that the sympathetic nervous system is also engaged but it is being overpowered by the vagus nerve. So, when our warm therapeutic relationship with our client and our intelligent touch navigates releasing a freeze/dissociation state, the client may next experience very high activation in their body. It could be generalized to having a lot of energy, ready to go for a run, or it may be local and the high energy quality leads to trembling in a region of the body, like their jaw may start to shake outside their conscious control. This is a natural neurological state when the dorsal vagal state lessens, the sympathetic charges need time to also dissipate. Social connection, a safe environment, and a restful orientation is very helpful to bring back the ventral vagus tone. With ventral vagus activation, there's a gentle brake on the fight-and-flight responses resolving in your client's system; a new moment can then be experienced by the client, a sense of novelty may show up. In Rolfing SI, we connect to the observable signals of activity of each of these branches of the ANS.

Let us now consider the broader scope of where the vagus nerve innervates. The vagus nerve innervates the heart, but it also innervates the organs below the diaphragm. Consider this example: a Rolfer is working with and taking the time to perceive the state of peristalsis in their client's belly, gentle visceral contractions that are palpable as the stomach and intestines have their sequential organized contractions. The client is talking, their face is animated, they are looking around easily while feeling sensations – this is ventral vagal neural dominance. Now imagine that as the Rolfer's hands gently investigate a scar from a surgery to the abdominal organs, the client remembers something about that and the Rolfer feels a total cessation of those earlier movements: this may be dorsal vagal freeze. We will talk further on about how to handle this moment. Giving skill, technique, and time to the tissue and the whole person may allow the tissue to release from the immobility so that the Rolfer then feels heat and fluttering of the tissue – discharge from the held sympathetic activation. In sum, we could imagine this was an incomplete response held in the viscera; when resolved, the Rolfer may observe that the presence of the person and their communication is even more natural and animated. Back to ventral vagal dominance.

Levine, SE, and Rolfing SI

The question about what to do when we encounter interrupted threat responses and traumatic ANS states during a Rolfing session has been answered by our other esteemed colleague, Peter Levine, PhD (Levine and Frederick 1997). Levine went from Rolfing SI to the creation of SE. (Editor's note: some of this story is discussed by Anngwyn St. Just, his close colleague, in the interview on page 15.) SE certification and the clinical application of Levine's concepts empower Rolfers to handle high sympathetic arousal and/or high dorsal vagal arousal causing immobility, dissociation, and/or freeze. Levine carefully describes observing, tracking, and generating conditions to follow the flow of the ANS during a session. Resolving trauma is delicate work, and takes training and conscientiousness on the part of the practitioner. A high value is given to the emotional experience of safety and its correlation to the ANS ventral vagal function, as well as knowledge about how people have defenses entrenched in their body, their person. Tracking the experience of the client, with special attention to the signs of ANS function, will allow us to improve and master our work. It is because of the depth of Levine's trauma work that we have the language to make our Rolfing sessions trauma-informed manual therapy sessions.

We start with offering clinical safety. As we know, Rolfing work happens through specialized forms of touch, be it through our hands, words, or personal energy. We are constantly dialoguing with the ANS in all the steps of the Ten Series and post-ten work. When our contact is interpreted as safe, this can allow discharge of held energy, therefore completing interrupted threat response cycles. The safe space of our offices allows the client to reorient, as well as build capacity to contain ANS charge related to their experiences. Rolfers are constantly dialoguing with the ANS, we deal with unlocking somatic patterns as well as producing new experiences. When the work takes place with safety, the client has the opportunity for their nervous system to produce new experiences that become encoded into memory.

During healthy human development, it is natural for the ANS system to develop resiliency – that is to say, the person will be able to overcome their experiences with overstimulation and under stimulation. Traumatic stress states can cause individuals to lose this capacity, whether a sudden traumatic event or an environment that causes harm over time. What is called *shock trauma* relates to events that are physical and/or emotional that are sudden, abrupt, and require immediate adaptation from the nervous system to build defensive strategies. On the other hand, *developmental trauma* refers to adaptations that the nervous system had to make over periods of time to cope with traumatic conditions, like chronically overwhelming experiences being the norm in a person's life, which may interfere with expected psychomotor development. Adaptations that may work include dissociation in part or in the whole being, malformations of body segments, and/or lack of sensorial integration. This in turn will generate spaces, gaps in the relationships between body systems that have not had the chance to fully form. Embedded in the

structure of a person lies the history of survival they have lived, held in patterns of activation and/or in dissociation, in hyper- and/or hypo-tonus states.

Levine describes that the nervous system may attempt to integrate traumatic stress states by joining events or elements of an experience together; this is called *over coupling*. It could be the body itself tightening its parts, constricting the musculature and other elements together into seemingly one thing; for example, a chronically held shoulder may also be tightly linked with emotion, sensation, and meaning involved in particular events of the person's life. These conditions likely involve high sympathetic activation, a high state of defense, unfinished responses, and expressions from the traumatic material. As the Rolfer works to soften the myofascial tone, discriminating and relating planes of fascia, the client may find the work triggers discharge from their held sympathetic activation. The Rolfer's timing here is crucial: if touch continues to overstimulate the body, the client may get locked further into a defensive state, recruiting more sympathetic activity to deal with the input (the touch of the practitioner). When touch is not overstimulating and discharge becomes possible, practitioners need to track these signs and allow time for the discharges to happen. This also gives time for the natural resiliency of the ANS to show up. Levine encourages practitioners to pendulate between manageable amounts of activation and rest/safety to allow discharge to take place. The Rolfer must keep a warm therapeutic relationship with their client during these delicate nervous-system conditions, to take the releases step by step, be an observer to the unfolding, and end with integration in gravity.

As already discussed, there are times the sympathetic activation of a person's system escalates to the highest order and then the parasympathetic system will try to take over. *Under coupling* is an unconscious protective response that leads to the nervous system dissociating from the experience, freezing awareness and even fragmenting the experience. This can happen at many levels. It can be in one layer of the event, where the person feels the sensation, for example, but not the emotion related to it. Or it can be a lack of connection to places in the body that were impacted. Touch and directing the client's attention to the area may help reconnect these dissociated parts. This can bring new sensation and perception that may initiate a process of integration so the part can return to being part of the whole. Inviting the client to do movements or micromovements, and helping them connect to premovement and underlying intention, may bring in either over coupled or under coupled elements with a variety of ANS activity. Our response as Rolfers is the same: we track what is happening, we support discharge, we assist in 'building the container' (which helps the person to have the capacity to contain the experience and the associated charge), and we integrate these varieties of energy into their sense of gravity, space, and movement.

Therapeutic Relationship Is Crucial

Successful intervention requires that the therapeutic relationship consider these ANS states and polyvagal theory. Making contact with the client starts at the initial interview, where practitioner and client establish their relational patterns. If safety is experienced, then the client will have the ventral vagus active as their dominant ANS state. This is observable: contact feels comfortable, facial expressions are relaxed, and the muscle tone of the client and Rolfer reveals stability. If not, the client may stay stuck in their patterns or may get into defensive modes that will not serve the SI process. In these cases, they will present with muscle constriction, won't find ground as easily, and they may lose orienting to different degrees. Rolfers can build trust by having a restful presence in their own relationship with gravity; this helps co-regulate the state of the client's nervous system. If the Rolfer can modulate their own levels of activation, and find balance and safety in their own body, the client will resonate with this. The client will have a model to build safety in their own system, reflecting and mirroring the relationship qualities experienced during the session with acceptance and containment provided by the Rolfer.

Education, Integration, and Assimilation

Rolfers can offer many levels of education to their clients. This can happen subtly with the new sensory info we give to tissue through touch, or with the guiding instructions we offer with Rolf Movement, psychobiological elements, or energy assessments. We can also offer direct information about the client's ANS functioning, which may assist them in understanding the psychobiological states they are experiencing. We educate clients about their patterns, we open possibilities to assist in assimilating the new information, and we increase awareness of their self through their felt sense of their body schema. This is part of our job, to assist clients to become more aware of their relationship with their self, others, and their environment. We can also teach the threat response cycle, what happens when there is interruption, and the polyvagal states. Clients may experience more safety with their bodies when they understand the natural and unconscious physiology they experience. This will help them have consciousness of who they are, their postural patterns, and the meaning of the changes they are experiencing. When Rolfers teach clients to track ANS flow as an education process, they are giving a lasting tool.

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Integration and assimilation through movement, resonance, and closure must have safety and reorientation so the client is able to keep this new experience in an embodied manner with the corresponding changes in the myofascial web in gravity. Rolfer and client may naturally find themselves both in observable ventral vagal function with co-regulating presence, alertness, and at the same time a sense of rest and stability. Help the client find their own words that describe their experience of safety. We may invite some knee bends or some ground/space orientation to organize them around their own stability structurally. Integration of any new material from the session will

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have taken place when the client has an *embodied presence in gravity*.

Final Words

As a philosophy, we come from a holistic point of view, with multidimensional considerations (body, emotions, spirit, mind). We talk about a body and its anatomy arranged in the gravitational field, as well, Rolfers are concerned with the many layers of the client's life experience and how their ANS function is interrelated with their body moving through space.

Over time Rolfing SI has evolved to include these different layers, and as a community of prefessionals we are gradually developing techniques of assessment and understanding more about the complex relationships between the different categories. The psychobiological taxonomy that deals with our identity, consciousness, and the emotional aspect of our experience that shapes the body and its myofascial arrangement; it is fundamental, prior to any form we take and any placement we adopt in gravity.

If we consider the ANS as the physiological structure that shapes our bodies and subjectivity, we have a concrete entry point to this universe. ANS function can be like a spotlight that amplifies our understanding of our work, this knowledge can expand the scope of research about Rolfing outcomes, and serve our clients. This essay is far from complete, as we are just starting this inquiry of exploring and using the ANS and its functions consciously in the Rolfing context, but I hope it offers an entry way and inspiration to many. Our concept of the 'Line' and the human form in gravity gives us a beautiful, synthetic reference to access and deal with the mystery of creation, through ourselves, our own form and our experience.

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Training Resources

Peter Levine's work of SE is taught through Somatic Experiencing® International, https://traumahealing.org.

Stephen Porges's work on applying polyvagal theory is taught through Polyvagal Institute https://www.polyvagalinstitute.org. See our interview with the Randall Redfield on page 50.