

Wisdom, Attachment, and Love in Trauma Therapy

Beyond Evidence-Based Practice

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2 Neuroscience and Trauma-Informed Practice

PTSD is a whole-body tragedy, an integral human event of enormous proportions with massive repercussions.

—Susan Pease Banitt, *The Trauma Tool Kit* (2012)

Masterful therapists strive to be on the cutting edge of emerging scientific knowledge that informs their practice. Knowledge is dynamic, not static; it grows, morphs, disintegrates, incorporates, and reintegrates. Just as we must continually update our operating systems and software on our computers, so must we upgrade our minds with new practices while keeping abreast of the latest theories.

In the spirit of updated knowledge and continual growth, this chapter will present some of the latest neuroscience findings at the time of this writing (2017). As a clinical supervisor, both of second-year MSW students and for post-graduate licensure, I have found that understanding theory is only (the left-brain) half of the knowledge needed for treatment. Application (right-hemisphere thinking) comprises a more difficult task and is why therapist licensure requires several hundred hours of post-graduate practice with supervision. So, after each theoretical section there is a discussion on application directly relevant to clinical practice with suggestions for marrying knowledge with action.

ACE Study

In 1985, Dr. Vincent Felitti was running an obesity clinic for Kaiser Permanente in San Diego when he became stumped by patient results. The clinic helped people lose weight in large amounts, but about 50% of participants would suddenly drop out after losing significant amounts of weight with no explanation. In an effort to assess why patients were leaving, Dr. Felitti conducted interviews with the dropouts. A slip of the tongue on his part provided a clue. Instead of asking a patient, “How old were you when you became sexually active?” he asked, “How much did you weigh when you became sexually active?” She answered, “Forty pounds.” And then added, “It was when I was

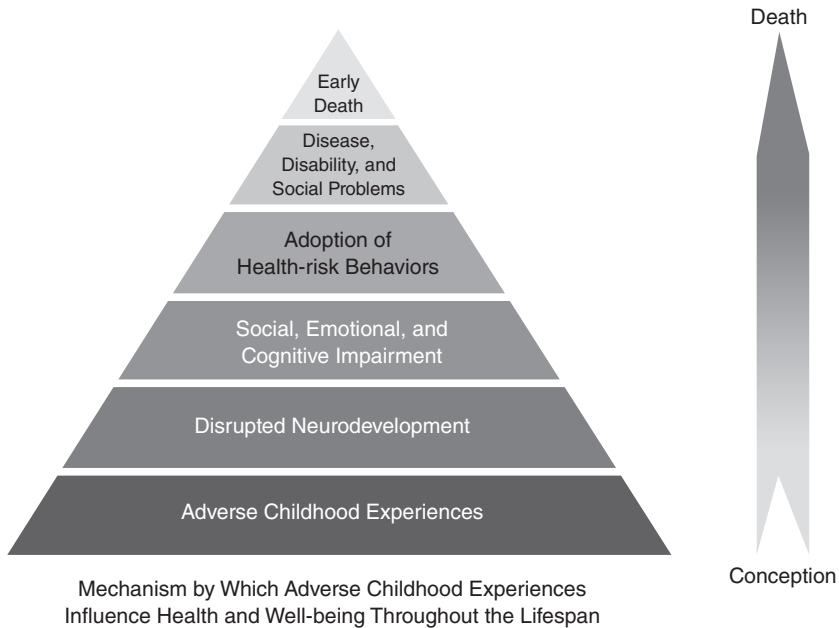


Figure 2.1 ACE Study (Centers for Disease Control and Prevention, 2014)

four years old, with my father” and started to cry. Several more client interviews yielded similarly distressing answers. Dr. Felitti began to realize that patients were gaining weight—not slowly over years as some thought, but suddenly, after traumatic events in childhood. In fact, most of the 286 people interviewed had been sexually abused as children (Stevens, 2012). It dawned on him that distressing childhood events were perhaps a major cause of mental and physical problems in adulthood.

Through Kaiser Permanente, Dr. Felitti joined forces with the Centers for Disease Control to conduct research on this question: did adverse childhood events cause problems in mental and/or physical health as people aged? From 1995 to 1997 they enrolled over 17,000 patients in their study. The ACE (adverse childhood events) study did not look at the number of difficult episodes in childhood but at *the number of categories of adverse events that people were exposed to in their childhood.*

The categories are:

1. Recurrent physical abuse
2. Recurrent emotional abuse
3. Contact sexual abuse
4. An alcohol and/or drug abuser in the household
5. An incarcerated household member

6. A household member who was chronically depressed, mentally ill, institutionalized, or suicidal
7. A mother who was treated violently
8. One or no parents
9. Emotional neglect
10. Physical neglect

Notice that there is no metric for psychopathology, no diagnosis involved. The patients answered a questionnaire to come up with their ACEs score. The data crunching began, and it continues to this day. There are dozens of charts and articles generated that are available to view on a number of websites. Recently the documentary movie *Resilience* (Brook Holston et al., 2016) was released to focus on the ACE study and its beneficial effects on community medical care and education.

As you can see, the ACEs can be roughly divided up into abuse issues versus household challenge issues. This finding supports a traditional social work ‘person in the environment’ approach to treatment, a focus on the broader circumstances of a person’s life growing up as opposed to a specific focus on pathology and symptoms. Each area of mental health treatment has their biases, preferences, and one could even say temperaments (with, of course, a great deal of overlap). Psychiatrists are trained to focus on neurobiology and pathology; counselors focus on relationships and mental health diagnoses; marriage and family therapists focus on relationships; and social workers focus on all of the above plus social justice and community advocacy. Traditional mental health treatment has neglected great swaths of trauma-inducing events in people’s lives, and in a sense has ‘blamed the victim’ for labeling the results of these woundings as psychopathology. Collectively, doctors and therapists are beginning to wake up to the pervasiveness of trauma in both childhood and adulthood. In 2011 alone, the National Institutes for Health allotted 5.55 billion dollars to projects that involved research in neuroscience (Society for Neuroscience, 2016).

Mental health professionals, and all of our society, have been heavily influenced by the legal system in our assessment of trauma. Unless we are trained otherwise, we tend to assess pathology and distress along the lines of what is recognized in the legal system as distressing. Let me give you an example. If a stranger sexually assaults someone, the stereotypical ‘stranger in the bushes’ rape, they are more likely to get a severe sentence than a date rapist, who may be more likely, in turn, to get a severe sentence than a sexually abusive family member (who often is not prosecuted or sentenced at all). In the article ‘Rape and the Criminal Justice System’, the authors state, “Afraid that losing cases will look bad on their records, prosecutors are excessively reluctant to prosecute acquaintance rapists.” They elaborate:

In a stranger rape, the possibility that the parties misunderstood each other’s signals does not arise. As a result, the woman’s character and all the controversial issues of appropriate sex roles and behavior in dating

situations ordinarily are not issues. Toward the victim of a stranger rape, the public usually feels compassion, with a correspondingly severe attitude toward the rapist.

(Bryden & Lengnick, 1997)

Because stranger rapes are more likely to get convictions and longer sentences, the general public assumes that these events are more traumatizing. Unless therapists are educated otherwise, they will make the same assumptions. In fact, people can be far more traumatized over a longer period of time by sexual abuse from a parent or intimate acquaintance that doesn't rise to legal definitions of sexual assault than in cases where stranger attacks do meet that definition. *The ACE study shows that there are many types of adverse events in childhood that don't even involve any abuse or criminal events.* But they still cause traumatic neurological cascades in the developing mind and body that affect people for years afterwards and even over the entire lifespan.

The ACE study results have been astonishing and are revolutionizing health care and community care with far-reaching impacts in education, community mental health, the justice system, and treatment of chronic medical conditions such as substance abuse, heart disease, and obesity. *People who scored 9–10 were dying on average 20 years earlier than people who scored 0–1.* The CDC has documented a dose-response relationship to the number of adverse events recorded and the amount of physical, emotional, and social issues people had later in life. In other words, the higher the ACEs score, the more difficulty people had with physical health, mental health, and functioning in society in general. Here are just a few of the problems a score of 4 or more ACEs predicts: smoking, alcoholism, depression, heart disease, drug abuse, the need for anti-anxiety medication, hallucinations, and problems with the law, as well as early teen sexual behaviors and pregnancy. In order to understand how so many disparate dimensions of human experience can be affected by ACEs, we need to dive into neuroscience.

Clinical Application:

- Understand that diagnosis is not the be-all and end-all of trauma assessment. Your clients do not have to have PTSD to be traumatized. The ACE study may be a better tool than the DSM (American Psychiatric Association, 2013) with which to assess levels of trauma in the body/mind—especially developmental trauma. Ideally, you will use both of these tools for diagnosis and assessment.
- Include the ACEs questionnaire as a regular part of your intake or assessment forms or procedures.
- Educate your staff and supervisees about the importance of this study as part of trauma-informed care. Help them understand that the mind IS the body, and that all psychological trauma has physical consequences.

HPA Axis

Over the last 10 years or so, much research attention has focused on the hypothalamic–pituitary–adrenal axis as a major system affected by traumatic stress. This structure connects the autonomic nervous system to the neuroendocrine system. If it is injured or disabled in some way, people develop a myriad of problems with health and behavior.

The hypothalamus sits in the brain and ‘talks’ to the pituitary gland by creating hormones and sending them over to the pituitary gland. If you recall high school anatomy, you may remember that the pituitary gland functions as a ‘master gland’, directing other important glands such as the thyroid and adrenal glands through secretion of hormones, which, in turn, secrete *their* own hormones. The system is complex and hierarchical. The adrenal glands produce cortisol, the fight or flight hormone. You could think of this system as consisting of the CEO (hypothalamus), Vice President (pituitary gland), and Managers (downline glands such as adrenals, thyroid, parathyroid, etc.). They constitute the neuroendocrine or hormonal systems of the body.

What function does the neuroendocrine system serve? Take a look at Figure 2.2. What is the first thing that jumps out at you? For me it was that the components of the neuroendocrine system are all such disparate, seemingly unconnected functions. The second thing I noticed was that all of my

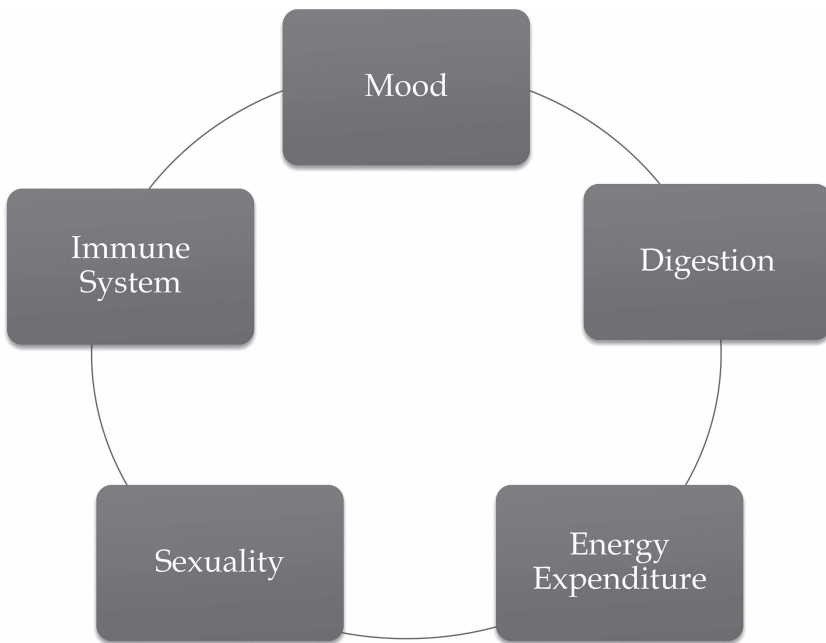


Figure 2.2 HPA Axis Functions

trauma patients had complaints in these areas of functioning. In fact, the more extreme their trauma history, the more likely it was that they were under some kind of medical care for complaints related to this chart. If you take a quick look around the HPA axis wheel, you will notice that symptoms manifest as disturbances of ‘too much’ (hyper) or ‘too little’ (hypo) and sometimes a chaotic vacillation between the two cycles (e.g., bipolar disorder, digestion, sleep cycles). Like Goldilocks, every organic system is looking for that range of ‘just right’ functioning. Trauma throws every system off the axis of optimal functioning and into a certain amount of chaos, where the body is constantly playing ‘catch up’ to find equilibrium.

Let’s go through this chart.

Mood: The most common moods that present in therapists’ offices are anxious and depressed moods. Less common are mixed, rapid cycling or some kind of euphoria (mania). I have yet to meet a trauma client that doesn’t complain of mood problems.

Digestion: a huge area that covers every process from the mouth to the colon. One could also include signaling for hunger and thirst. Clients either are too hungry or fail to register hunger. Digestion is often sluggish with feelings of bloating. Meals are unsatisfying, rendering a common human pleasure a source of loss. Celiac disease and irritable bowel syndrome can be triggered. Blood sugar levels can become inconsistent. Obesity is common. If we go back to the ACE study, we will find that obesity, abdominal pain, and diabetes increase with the ACEs scores.

Energy Expenditure: One of the most common complaints of people that have been through traumatic stress is either an abundance of energy (hyperactive, hypomania) or a feeling of being emptied of all drive and energy (hypoactive, depressed). These can be chronic states as in chronic fatigue disorder or rapidly shifting states where there are certain times of the day people feel really keyed up and wired followed by a crash where it is difficult to function at all. This pattern can also show up in sleep symptoms where clients complain of insomnia, sleeping all the time (hypersomnia), or being awake but feeling like their brain is still asleep (brain fog).

Sexuality: is defined by the Oxford English Dictionary as “the capacity for sexual feelings” (Oxford University Press, 2016). Most therapists see the obvious connection of sexual abuse to altered sexual function. What is a little less obvious is the application of hyper and hypo functioning of the HPA axis to sexuality from nonsexual traumas. According to this chart, *any type of traumatic disturbance along the HPA axis may result in hypersexuality (e.g., promiscuity, unsafe sexual practices) or hyposexuality (low libido, low desire)*. It would be interesting to see more research looking at how nonsexual traumas impact the HPA axis in the area of sexuality.

Immune System: Hyperfunctioning immune systems result in autoimmune diseases such as rheumatoid arthritis, psoriasis, asthma, Hashimoto's syndrome (hyperthyroid), lupus, and Type 1 diabetes. There are over 80 types of autoimmune diseases that affect about 5–8% of the population; women are disproportionately affected (Brower, 2004). Hypoimmunity or immunodeficiency results in lack of resistance to infectious diseases, slower healing of injuries, and, in some cases, cancer.

Prior to the awareness of the HPA axis' role in the body, clients presenting with the above syndromes were often labeled as 'factitious' or 'malingering' by psychotherapists and psychiatrists. Through the ACE study, doctors and therapists are now starting to recognize that these disorders may have their roots in trauma and will often appear alongside trauma, especially in adults with traumatizing childhoods.

Clinical Application:

- Assess patients with a history of trauma (not just mood disorders) for dysfunction along the HPA axis, which corresponds to vegetative symptoms: sleep, appetite, energy levels, libido, and mood.
- Work collaboratively with the patient's medical doctors. Create a team approach even if you are working in private practice. Your trauma patients will always have a disturbance along the HPA axis that warrants medical care. Make sure they get it. Do not fall into thinking that processing the trauma psychologically will heal these physical issues any more than stitching up a knife wound will take away the psychological trauma of a violent attack.
- Use techniques in sessions and prescribe homework that works directly with calming down the HPA axis: breath work, mindfulness, grounding exercises. Consider being trained in a complementary therapy such as Reiki, yoga, or tai chi or recommending these classes to your clients.
- Teach sleep hygiene. Without sleep, our clients remain in a state of disturbance where they cannot heal. If sleep disturbance is severe, refer for medical treatment.

Amygdala Override

You are walking down your favorite nature path and a snake appears. You jump to the side of the path; your heart pounds, and you don't remember making the decision to jump. As it turns out, the snake is merely a stick. To the amygdala, that doesn't matter. Potential snake was good enough reason to hijack your motor responses and higher cortical centers.

The amygdala, the almond-shaped gland in the center of our brain, functions as an emergency response center. Once the amygdala detects danger, it

has the ability to shut down planning functions in the prefrontal cortex (“is it a snake; should I jump?”) and take over motor responses (by jumping you to the side like a fast zombie). And this is a good thing. Otherwise, certain personality types might still be debating whether the object in question is a snake or a stick while the snakebite is underway. The more trauma a person has undergone, the more sensitive the amygdala becomes to threat in the environment. Once the amygdala has taken over judgment and motor functions (it’s just doing its job), our clients’ behavior becomes unpredictable and idiosyncratic. Anything can happen, from violence (fight) to leaving a session suddenly or even firing us (flight) to dissociation or withdrawal (freeze).

A 40-year-old schizophrenic woman self-referred to my private practice (a highly unusual occurrence). In my attempt to get her into a local care program, I was mandated to do a trauma assessment against my preferences. After the second question of the assessment, she curled up in a ball on my sofa and stopped speaking. It was unclear what was happening, as I had not known her for very long. I felt a mild sensation of panic flow through and out of me at the sudden catatonic demeanor of my client. Was she regressed? In another personality compartment? In a psychotic episode? I decided to start speaking to her in a soothing voice, reminding her that she was sitting on my sofa in my office and that she was safe, grounding her in the details of the now. After about 30 seconds, she popped her head up over her knees, and with a smile asked, “How’d you do that?” As quickly as she went into amygdala hijack, she came out of it. The rest of the session passed uneventfully.

Clinical Application:

- Until we have done the work of mapping triggers with our client, we run the risk of inadvertently setting off the amygdala response. And, unless we have done the work of mapping our own triggers, we risk going into a reverb effect with our client: their amygdala response sets off our amygdala response, which sets off theirs, which sets off ours, *ad nauseam*. Know your triggers, and help map your patient’s triggers from early in treatment.
- Create a strong, safe, and grounded environment to work in. Have a safety plan¹ and rehearse it. The safer you feel, the more grounded you will be. The more grounded you are, the more grounded you can help your client become, especially in a time of crisis.
- Develop your tools for first recognizing and then pulling people out of an amygdala hijacking. If you work in crisis intervention, this may be a

no-brainer, but most therapists do not have to work consistently with crisis intervention skills. Do not try to fight fire with fire. Raising your voice, a hard stare, or threatening a client in amygdala hijack will create escalation that could result in violence towards you or your facility. Neuroscience says calmer is better—a calm brain is an organized and predictable brain.

Autonomic Nervous System

The autonomic nervous system consists of the sympathetic and the parasympathetic branches. The sympathetic system creates what we commonly know as the fight or flight response. It provides an activation of our body that promotes our survival as a species and prepares us to encounter stressful situations in our body. The parasympathetic system uses a different set of nerves to calm down and regulate the body and serves the functions of ‘rest and digest’ or ‘feed and breed’. Together they provide a homeostatic mechanism so that the body stays in balance throughout the activities of life. One may dampen the function of the other but they are always operative. You can think of them like hot and cold water always mixing together to create a certain temperature, depending on what is needed in the environment.

Sympathetic Nervous System

When folks are subjected to either a single intense trauma or a series of stresses over time, the sympathetic nervous system (SNS) activates to provide the physical resources to meet the challenges of that situation for the purpose of physical survival. The human body was not meant to live in a state of chronic sympathetic arousal, yet that is how many of our trauma clients live and have been living long before they meet us. To truly understand the condition of our clients and to help them understand their bodies and behaviors, we need to be able to understand the effects of SNS arousal. After my own bout with PTSD, this theoretical construct took on a very lifelike reality. Living in chronic sympathetic overdrive, as our traumatized patients do, is an extremely difficult and debilitating condition that can end up having permanent negative health effects on the body.

Sympathetic system activation has these effects on the body:

Eyes: increases the pupil size and pulls muscles of eyes towards peripheral vision (the better to see oncoming threats by increasing depth and breadth of visual acuity).

Digestion: decreases the amount of saliva in the mouth and overall slows down the digestive system, thus diverting energy for a fight response. It also stimulates the production of white blood cells in the bowels just in case of a perforation.

Metabolic: frees up stored fuel in the body quickly to mobilize energy, especially glycogen from the liver; inhibits the production of insulin, which is used to promote food storage (a parasympathetic function).

Circulatory: increases heart rate and increases blood pressure by constricting blood vessels to get blood and oxygen to the organs quickly. Also decreases blood flow to extremities to focus on organs. Increases blood clotting—again preparation for perforation injury.

Respiratory: increases rate of breathing to promote oxygen delivery and helps lungs take in more air by expanding volume through dilation.

HPA Axis: mobilizes the hypothalamus, which creates a cascade of job-specific hormones designed to make the body battle ready, including cortisol, epinephrine, and norepinephrine. These hormones increase alertness, release energy, and prepare the body for a rapid response to injury.

Urinary System: decreases urine production in the kidneys (water retention); relaxes bladder and inhibits sphincter for retention of urine until a safer moment.

Tracking these nervous system reactions in the physical body helps the therapist understand how the stress of the trauma is impacting the everyday functioning of the client. It also helps make troublesome behaviors meaningful

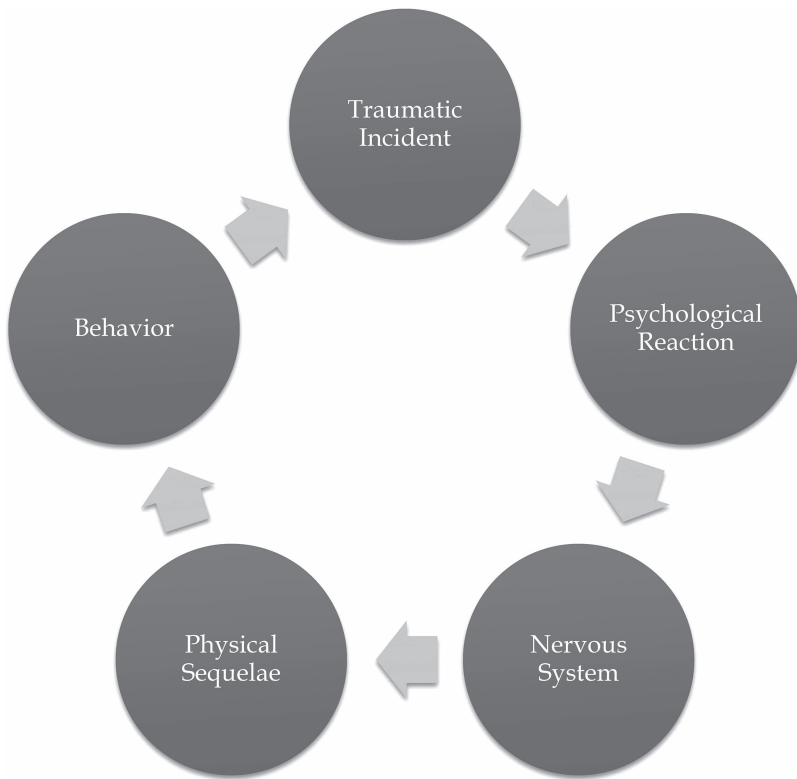


Figure 2.3 Cycle of Trauma

and solvable if we know that some fallout of trauma is not just psychological but also physical.

Figure 2.3 demonstrates how a loop can be created from traumatic stress and its manifestations in the body. Trauma begets trauma. A traumatic reaction leads to a psychological reaction, which activates the sympathetic nervous system. The sympathetic system outlined above creates specific and predictable reactions in the physical body. These physical changes then can lead to behavioral changes in the client. Often these behavioral changes are judged harshly leading to another traumatic incident, and round and round we go.

For example, maybe we have a stressed teenaged client with a trauma history. They are failing school and, after some interviews, we realize that they have blurry vision and trouble concentrating. The blurry vision can be a symptom of chronic sympathetic overdrive from overdilated pupils and the muscles of the eyes constantly pulling peripherally, making it hard to converge on small print. These physical symptoms lead to an inability to read for very long periods of time, write papers, or have good comprehension. This student then maybe is labeled as 'lazy' or a troublemaker. Feeling like a failure, shamed, and criticized, the teen spirals further down into depression or might be acting out. If we can see the involvement of the sympathetic system in the beginning of this cycle, we can help the patient advocate for themselves physically, a very empowering stance, and a road that is less taken with the way most psychotherapy practices are currently functioning. If our theoretical client gets help with mindfulness-based stress reduction or even some vision therapy, their study problems can resolve, their self-esteem can increase, and they might be able to start making their way forward. This type of intervention creates space for healing their deeper issues instead of spiraling down into further stress and despair.

Parasympathetic System

In the parasympathetic system, the effects of sympathetic activation are neutralized and reversed. Parasympathetic stimulation returns the organs to a normal (noncrisis) mode of functioning. The stomach starts digesting food; peristalsis returns. The heart rate slows; muscle tension drops. The neuroendocrine system ceases pumping out amped-up hormones. Peripheral scanning with the eyes relaxes in favor of convergence (close-up) work. When their sympathetic system's hypervigilance releases, our client can start to feel safe again.

In the last few years, I have added Reiki as a complementary therapy to the work I do, especially with traumatized clients. Reiki is a deeply relaxing method of healing shown to help relieve stress and depression (Baldwin, 2011) that can be done with either hands on or hand off the client. (The client is always fully clothed.) Reiki can be done with the patient in a therapy chair or on a massage table. When I am doing a Reiki session, I know when my client's parasympathetic system becomes dominant because I can hear

the stomach start to gurgle—an embarrassing moment for them at first, but always a good sound to hear, because the body does not lie! If the digestive system is active, the parasympathetic ‘rest and digest’ system has become dominant and inhibited, at least for the moment, the sympathetic fight or flight response.²

Clinical Application:

- Our job as therapists is to help clients connect the dots for their healing and coping skills. Linking physical symptoms of trauma to ‘disabilities’ or problem areas in functioning helps empower our clients to take action and interrupt the negative spiral. We need to connect the dots from incident to psychological reaction to physical manifestation to the behavioral consequence and unwind this cascade by addressing both physical and emotional causes of distress.
- Become a Sherlock Holmes and apply the chart in Figure 2.3. Do a thorough assessment of the physical complaints of your client and correlate them to nervous system functioning.
- Consider the ripples outside of your office.³ For instance, how does sympathetic overdrive lead to a risk for heart disease? If your client is a first responder, for example, and also has a history of personal trauma, you may want to be proactive in helping your patient keep track of their cardiac health and make appropriate referrals.
- Find ways to activate the parasympathetic system in session. There are so many modalities—even just listening to relaxing music for a few minutes can help! Give homework for your clients to learn to turn on their ability to ‘rest and digest’!

Polyvagal Theory and Dissociation

Until recently, we have not had a good way to explain the phenomenon of dissociation and dissociative disorders in traumatized patients. There have been many academic fights about even the existence of dissociative disorders. Several years ago, I heard a prominent psychiatrist say to an audience of over 2,000 people at a trauma conference that he had never seen a case of dissociation! I would say that he probably has never recognized a case of dissociation.

As a clinical supervisor, I find the weakest clinical area of every therapist I supervise is dissociative disorders. Many therapists are taught little to nothing about the prevalence of dissociation and how to assess for it. Dissociation is hard to spot because behaviorally it manifests more as an absence than a presence: absence of affect, absence of memory, absence of process. It is possible that the field of psychology has been blind to dissociation because we have tended to put more faith in what is observable as a presence (affect, memory, process). Up until recently, we had no concrete scientific way to explain dissociation as a neurological or biological phenomenon. Enter Dr. Stephen Porges.

Dr. Porges goes beyond the sympathetic vs. parasympathetic definition of the autonomic nervous system as outlined above. He discovered that humans actually have two main branches to the vagus nerve that are involved in parasympathetic response. One of these branches, the dorsal vagal complex (DVC), is an older evolutionary structure that has existed in neurology since the time of reptiles and amphibians, through the evolution of primitive vertebrates, and still exists in most vertebrates, including humans. The DVC is unmyelinated and mostly provides regulation to the organs beneath the diaphragm. Its older evolutionary function can be seen in animals such as the turtle, whose DVC evolved to provide an adaptive defense of freezing under stressful circumstances. Under extreme duress, the same animals might faint or even die from a stress reaction.

Because freezing was not a great strategy for the survival of mammals with a more complicated neural structure, higher vertebrates evolved a myelinated vagus branch called the ventral vagal complex (VVC). The VVC provides for a more nimble and nuanced response to stress through the sympathetic response outlined above but also by facilitating social affiliation and cuing. It provides regulation to the organs above the diaphragm, including the limbic system inside of the brain (Wikipedia, 2017).

Trauma always pushes us into more primitive defensive structures. Mammalian defensive systems fail in the face of extreme trauma. The very setting of trauma often deprives us of social help in the face of violence or injury. When people get help immediately after a devastating event, they are much less likely to develop PTSD or dissociative disorders. We know this as a culture, and that is why a response to disasters comes from both the government and nonprofit sectors. When we cannot flee, when we cannot get help, when we cannot fight off an attacker, the more primitive DVC steps in as a last ditch (although ancient) defensive structure of the body: the freeze or dissociation response. We become psychologically and physically frozen. In extreme cases, we may faint. I do know of at least one case where a child actually died from a fear response during an assault.⁴

When people have a critical level of trauma in their system, they can become stuck in a chronic state of DVC activation. Some of the signs are:

- Isolative behaviors
- Averse to new experiences
- Flat affect
- Digestive issues: obesity, irritable bowel syndrome, anorexia
- Low tolerance for low frequency sounds
- Does not like to be touched/held
- Memory issues
- Dissociates frequently

It is important that we understand these phenomena as states, not traits, even if they have persisted for a long time. They manifest because the client does not feel safe. The more evolved mammalian circuits are not able to take care of the extreme fear that is running in the background of the nervous system.

To elicit functioning from the VVC or higher mammalian vagal circuits, the therapist needs to have the ability to engage those circuits herself and use them on behalf of the client (Howes, 2013). In fact, one could see this entire book as a guide to using engaging the VVC—access to the limbic brain and heart—for the therapist and client.

Clinical Application:

- The theory may be complicated but the clinical needs are simple enough. As Dr. Porges himself puts it, “The most successful trauma therapists are those that enable their clients to negotiate and navigate a sense of safety” (Eichorn, 2015).
- Engage your higher mammalian self, consciously, in session. In other words, don’t meet your client with a reptilian flat face! Friendly, but not staring, eye contact, smiles, and an overall welcoming, caring, and transparent demeanor go a long way to creating safety even before the patient sits down for their first session. I once knew a neurologist who kept a picture of a smiling monk on his desk. He was not Buddhist; he just derived great comfort from seeing the monk’s warm expression. Be the monk!
- Do a physical or mental walk-through of your treatment space, from the time the client pulls in the parking lot to the moment they sit down in your office. What is the environment like that they have to walk through to get there? How safe is it? How safe does it feel for someone with a trauma history? Are there loud noises (like street work)? How is the lighting? Are there long stretches of empty corridor they have to walk through to get to you? How can you warm up any part of the physical space that doesn’t feel safe and welcoming? Ask your clients about their preferences.
- Do focus on social supports for your client. Porges describes social support as a necessary “neural exercise.” If they are not yet capable of forming stable attachments, can they join some kind of group that will help them activate the VVC, such as a chorus or an improvisational comedy group?
- Develop your ability to see which vagal state is activating in your client. A client in the shutdown reptilian vagal system needs heightened safety and security. They need a soothing voice and tender expression. Confrontation in this state is contraindicated. If they are in the higher mammalian circuits, they can tolerate a little more challenge and excitement in session. Notice when your own behavior initiates a change in vagal state and work gently with that.
- It is a little strange that our profession has evolved into a place where people are very reluctant to touch each other, just because of a few bad apples. Against a sea of lawyers saying otherwise, I am going to say here that I think there is a place for safe and nurturing touch in clinical practice, but as with all else we do it needs to be boundaryed and documented. A handshake, a hug with permission, or Reiki with permission to touch are powerful modalities that help people move towards

healing. If an immobilized 4-year-old moves into a higher vagal circuit and wants a hug or to sit on our lap and color on an inpatient unit, what are we doing to them, to their developing brain, if we deny such basic human need? Let us revisit these discussions in our treatment centers and practices.

Memories, Fragmentation, and Dissociative Strategies

Neuroscience is an emerging field. The brain is a vast and complicated organ. We have only begun to plumb its depths. Nowhere is this truer than in studying the phenomenon of dissociation. We barely understand the process of making and retrieving memories, much less how memories are repressed and split off to the degree where different ego states and personalities are created. It seems that the brain employs a kind of 'divide and conquer' strategy to manage overwhelming traumatic events. But before we jump into some theoretical neuro-modeling, let us look at what we do know about memories and the hippocampus.

The Hippocampus

The hippocampus has many jobs. One job involves converting short-term memories into long-term memories. It also helps us navigate our environment spatially. These two things at first glance do not seem related, but consider that our memories consist of a narrative that happens in time and space. We can deduce some of the function of the hippocampus by what happens to the individual's abilities when it is impaired. We know that in Alzheimer's disease the hippocampus is compromised, which results in short-term memory loss; in early stages, the person with Alzheimer's may remember events very clearly from early childhood but forget their grandchildren.

Sitting in the limbic brain, the hippocampus looks remarkably like a seahorse, hence its name which, translated from Greek, literally means, 'horse' and 'sea monster'. Several research studies have established that the hippocampus changes shape and loses volume after a trauma, and that it changes consistently to the kind of trauma it has experienced (or processed?). In other words, people who were subject to physical abuse had the same type of shrinkage in the same area of the hippocampus, whereas veterans of war had shrinkage and volume change in a different yet consistent area of the hippocampus. Due to its high levels of glucocorticoid receptors, the hippocampus is extraordinarily sensitive to the hormone cortisol. Put another way, it doesn't like stress and responds to stress with neuronal atrophy. The good news is that research has established that certain medications, such as fluoxetine, seem to increase the volume of the hippocampus back to pre-trauma levels. The hippocampus has the amazing ability to generate new neurons as part of its regular function. There is a great deal of research currently being done on the function of the hippocampus.

Clinical Application:

- Conduct formal mental status exams at the beginning of treatment or whenever new traumas emerge to assess memory and cognitive function.
- Be aware that memory issues affect anyone in an educational setting and take measures to help them accordingly. Get learning disability status as needed so that clients may be able to have longer test times and resources.
- Consider referring for medication that will help to restore the function of the hippocampus.

Memory Fragments and Reassociated Memory

The brain seems to have a divide and conquer strategy to cope with memories that could derail functionality in the mind and body, especially in the early years when the whole brain is still quite plastic. People who have had one or more severe traumas often have those memory components stored in different compartments. When a traumatic event hits in early childhood, the brain separates the components of the memory to help prevent the child and the brain itself from becoming overwhelmed and nonfunctional. When clients engage in the memory retrieval necessary to fully heal traumas, we will encounter 'memory fragments'. These fragments break out into the essential components as seen in Figure 2.4: the narrative of the event, the input of the five senses during the event or sensations, and the feeling state of the individual at the time of the event.

When a client is processing historical trauma, they usually will encounter only one out of the three fragments at a time; the other two parts of the complete memory are segmented off. Often the clients do not know that they are experiencing memory fragments; they just feel crazy and anxious and/or depressed. Because we need all three components for a memory to feel 'real', the patient will often disavow these fragments as artifacts, imaginings, and

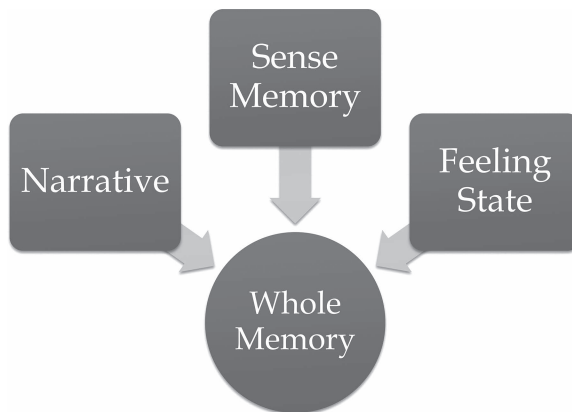


Figure 2.4 Memory Components

non-memories in the beginning of treatment. When even two of the three components reassociate, the client will feel as if they have ‘discovered’ a new memory, but really the components have been there all along, just disassembled like a puzzle on a table. This fact brings into question the idea of what a ‘recovered memory’ actually is. In the media and elsewhere, recovered memories are always assumed to be whole and an entirely new cognition to the client rather than a putting together of pieces that are already somewhat in consciousness. In this model, memories are never really lost in their entirety; they are just scattered. I have come to prefer the term reassociation for this process, as it is the opposite of dissociation.

What do these isolated memory fragments look like? Narrative fragments are pieces of story without sensory input or a feeling state. A client may say, “I know I was molested but I don’t know how or who did it” or they may just know that something terrible happened to them in childhood but have no details. They might have a narrative that says they were different before and after an event, even if they don’t know exactly what the event was. Their narrative might come from the police or hospital, especially if drugs were involved and their senses were impaired. When a client discloses a deeply held narrative for the first time, it is common for the feeling state to manifest shortly after or during the disclosure, a feeling state that they may not have consciously felt before. Hearing oneself speak the truth for the first time is a powerful and often devastating experience! Usually a client has had this narrative in their head for years, unspoken. In the presence of a trusted other, they feel safe enough to begin to reassemble the memory. Reassociating memories can take weeks to months. During this process, it only makes sense that there are significant neurological changes afoot as parts of the brain start to connect with each other for the first time.

Sensory fragments show up routinely in a patient’s associations, if we are astute enough to notice them. These are often, but not always, visual snapshots of a scene in the client’s head. *Clients do not relate to sensory memory fragments as part of their history.* Because daydreams and imaginings are visual images with no personal narrative or internal feeling state attached, clients relate to these fragments as imaginings or daydreams. They often think they are making the whole thing up. But unlike daydreams, these images (or other sensory inputs) are powerful and persistent; they have lingered for years in the client’s mind and are consistent, more like a recurrent nightmare than a daydream. Although we are discussing visual memory fragments, please note that a significant number of people are abused in darkness, with their eyes shut, under the covers or in other places where a visual component is not part of the experience, so it is common for sensory memory fragments to pertain to one or more of the other senses: auditory, smell, taste, or kinesthetic.

There has been some professional discussion about whether sensory memory fragments can show up in the dreams of clients before they are integrated as a real memory. Normally dreams do not represent actual experiences but are a complicated synthesis and purging of our waking life in REM sleep. However, since it is now accepted that full-on flashbacks can be nightmares, it stands

to reason that traumatized people might, in fact, be able to dream traumatic memory fragments. In some cases, dreams have been the first place that these memories have presented themselves.

Feeling state memory fragments manifest as somatic flashbacks. *Any recurrent feeling state that cannot be explained by events happening in real time is probably a somatic memory fragment.* Sometimes we call these states ‘overdetermined’, ‘drama’, or an ‘overreaction’. These feeling states are usually dysphoric. Fear and anger seem obvious enough. Other common somatic memory fragments include feelings of intense loneliness, terror, abandonment, humiliation, shame, grief, and helplessness. It is possible that, for some people, what we may diagnose as depression or an anxiety disorder is really a persistence of disassociated somatic memory. Anxiety and depression often lessen or resolve when memories are fully reassociated and processed.

Let’s apply this model to the case of Little Red Riding Hood, an unfortunate minor who became lost in the woods and was attacked by a vicious predator who killed and impersonated her grandmother before taunting and attacking her. A hunter found RRH, as we shall call her, at her grandmother’s house covered in blood. When RRH returned to civilization, she had a great deal of anxiety, an obsession about wolves, and missing time.

RRH presented as an otherwise normal little girl who was clearly traumatized. Her main symptom was an olfactory hallucination. She smelled forest odors when she was not in the forest, and those smells filled her with a feeling of foreboding.

When RRH came to therapy she may have said, “I see a picture of a wolf in the woods in my mind, but that doesn’t feel like a real memory (or my memory), and it doesn’t make sense to me. What was I doing there? Did that even happen?”

This is a visual sensory memory fragment. Remember, our brain doesn’t register memories as ‘real’ unless they have all three components: narrative, sense, and feeling state.

Alternatively, RRH could come in and say that she knows that something bad happened at her grandmother’s house, although she cannot say exactly what that was. She knew her mother gave her baked goods to take to her granny that morning and that she was found at her grandmother’s house by the hunter. She feels a vague sense of guilt and remembers chasing a butterfly. Everything in between feels very fuzzy and unreal to her. She feels ‘fine’.

This is a narrative memory fragment. With narrative memory our clients ‘just know’ or feel strongly that something bad happened but cannot give sensory evidence or a coherent narrative, just enough narrative to have the framework for a memory.

Or RRH could just come into therapy in a state of panic and anxiety and not know why she is feeling that way. She has developed a phobia of ears and teeth and has a strong dysphoric reaction to anyone that calls her ‘my dear’. She can deduce that these feelings relate to her missing time and being found by the hunter, but they do not actually *feel* connected. The panic and

dysphoria are feeling state memory fragments lacking narrative context and sensory input. In this fragmentation scenario, RRH may have been previously diagnosed with panic disorder.

She could have one, two, or three of these symptoms and not know that they are at all associated with each other if enough time has elapsed after the incident. She may define herself as an anxious, overreactive, and sensitive city girl with a poor memory and weird obsessions. Without a narrative from the hunter (let's say she just stumbled out of the woods on her own) and if she was sufficiently young (let's say under 6 years old), she may not even know or remember that she was ever attacked.

Clinical Application:

- Ask gentle reassociative questions when a possible memory emerges. How do you feel about that image you keep seeing in your head (sensory to feeling state)? What do you see in your mind's eye when you think that someone hurt you in school (narrative to sensory)? Do you have a story that comes to mind or a period of time associated with this feeling of profound loneliness (feeling state to narrative)?
- Believe your client before they believe themselves. Know that any persistent image, state, or thought is a clue to what happened to them. Discount nothing.
- Keep an open mind to the unfolding story, and know that identifying memory fragments can take months to years. Be patient.

Dissociation Through Self-Fragmentation

There is another way the brain protects itself and the person from catastrophic memories. If a person is young enough, generally under about 7 years or so, the brain, instead of compartmentalizing memory fragments, may completely compartmentalize memories as self-fragments or partially compartmentalize them as ego states. Memories in self-fragments are stored *in toto*; the self is split up into discrete parts that contain the memories for the organism without burdening the core self with undigestible memories. These self-fragments (also called 'parts' or 'alters') are frozen in time at a specific age that is not the current age of the client.

Sometimes the fracturing is incomplete, resulting in discreet ego states that are associated with certain memories. These ego states become subsets of self-states. The memories associated with them are more readily available than when memories are completely walled off as alters, but they are still compartmentalized and repressed. If you look at Figure 2.5, you will see that 2/3 of this self is compartmentalized through ego states that are associated with memories and 1/3 of the self has split off into a completely discreet self-state that holds a separate history (or memory), shown by the space between this section and the rest of the self.

THE TRAUMATIZED SELF

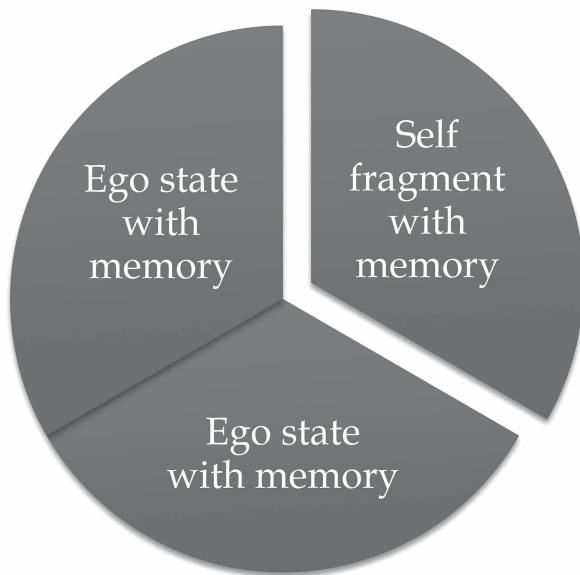


Figure 2.5 Self-Fragments and Ego States

The completely separate self-fragment with memory exemplifies the diagnosis of ‘dissociative identity disorder’ (DID), whereas the compartments that are somewhat discreet but not altogether separated would be more representative of ‘other specified dissociative disorder’ (if there were no completely separate self-fragment in the organism as shown below) or may indicate certain personality disorders (Shapiro, 2016).

Clinical Applications:

- Assess for degree of dissociation and the likelihood of DID with a test such as the Dissociative Experiences Scale (DES) (Trauma-Dissociation.com, 2017)
- Be aware that the prevalence of DID is about 1–3% of the general population and higher in clinical populations (International Society for the Study of Trauma and Dissociation, 2011). Therapists will definitely see clients with DID in the course of their practice.
- Take your time with a thorough assessment while being careful not to destabilize your patient. The average time it takes to diagnose a person with DID is 6 years.

Polyfragmentation and Engineered DID

Over 20 years ago, I was made aware of a subset of patients with DID who did not develop DID organically but as a deliberate creation through trauma-based mind control. These clients present differently from those with organic DID and have different needs to be met in therapy. From early childhood, they have been subjected to a form of human slavery where their minds have been systematically fractured with traumatic experiences and then rebuilt in such a way that they could be programmed and controlled over the course of their lifespan by handlers. The people with engineered DID challenge even the most sophisticated and experienced trauma clinicians, because part of their programming is to avoid detection and foil treatment with therapists. The groups⁵ that ‘train’ these people consider them expensive assets and will not let them leave or heal easily. They surround the programming and parts with various ‘booby traps’ that can derail therapy, confuse or distract the therapist, and disable or even kill the client. It is a very specific subspecialty in trauma treatment, one that requires a great deal of education and support to do well.

Up until recently, very few clinicians had ever heard of such a possibility or were aware of the reality of these mind control groups. As a member of the International Society for the Study of Trauma and Dissociation, I have access to a Special Interest Group (SIG) called Ritual Abuse Mind Control and Organized Abuse (RAMCOA). This group was created in 2008 and now boasts around 150 international members, most of whom treat people with engineered DID. Some of therapists in this SIG, which is run as a listserv, are also survivors of these groups. The wealth of information from the generous and genius therapists on RAMCOA has been indispensable for my clients and my practice.

One clue that you might have a case of engineered rather than organic DID on your hands could be the intense feelings of being deskilled and inadequate that arise in you as you are treating one of these clients. They puzzle and confuse even the most experienced of therapists until their multiplicity is recognized as engineered. Another sign might be the sudden appearance of self-harm, compulsions, or ‘crazy’ behavior after patient disclosures. These people have trip wires layered into their programming that are set to ‘go off’ whenever a therapist gets too close to a hidden truth or when the client remembers something new. These booby trap programs can look like:

- sudden suicidal impulses out of nowhere, especially ones that are ‘supposed to look like an accident’, as one client told me
- scrambled words or word salad in a client that has no history of schizophrenia
- an abrupt nonnegotiable firing of the therapist when the client is making progress
- pseudoseizures—episodes that look like grand mal seizures or dropping into a semi-conscious state with no EEG evidence of seizure activity
- feelings of being electrically ‘shocked’ at different places on the body
- recurrent and constant migraines

- an unexplained compulsion to return to a previously abusive environment that they have successfully left, such as an abusive family of origin or spouse, especially at certain times of the year such as Halloween.

The DID in such a client is supposed to be hidden, and they will have a fairly successful (for a while) 'front' or 'shell' personality. This front personality holds a semblance of consistency while switching personalities happens 'behind the scenes' as it were. Florid DID in these criminal groups is considered a sign of programming failure and is vigorously 'discouraged'. Polyfragmentation is a word that refers to the fact that there is often fractal splitting of the splits, multiplicity within multiplicity. An alter can contain more ego states and more alters, as can those alters within and so on. This presents a very complicated neurological and psychological picture, and there are often many physical sequelae to engineered DID. As with all of our clients, the keys to healing lie within our benevolent and caring relationship with these folks.

Clinical Applications:

- If you suspect someone like this on your caseload, I would recommend getting consultation at the outset with a clinician that has extensive experience with ritual abuse and mind control.
- Two excellent resources for information are the website www.endritu-abuse.org run by Ellen Lacter, PhD, and the seminal treatment book *Healing the Unimaginable: Treating Ritual Abuse and Mind Control* (Miller, 2011). You will need to know what they have to offer.
- If your client tells you about ritual abuse, believe it. Ritual abuse is real. Do not be put off by media propaganda that it does not exist. I have many colleagues who have, as I have, encountered ritual abuse and mind control in their practices. Some of these colleagues are survivors of it. Ritual abuse is alive and well in many communities. Intergenerational cults that practice violent sex magic (either real or feigned) are breeding grounds for mind control slave recruitment from various government agencies, military factions, and criminal organizations around the world.
- Learn about some of the common mind control programs and triggers. This knowledge helps us spot these clients sooner. As with any diagnostic work, pattern recognition is key.
- There are not enough specialists to go around. Know that, as one mind control survivor told me, a great therapist who is skilled in attachment and the art of therapy is the best antidote for a lifetime of control and abuse.

Notes

- 1 I cannot stress the need for a safety plan enough. Chapter 9 addresses safety in the workplace in depth.

- 2 Patients report that this relaxation response lasts anywhere from several hours to three days, a significant amount of relief for clients that have sometimes been in sympathetic activation for months on end when they arrive at therapy. Other commonly reported effects of Reiki are deeper sleep, better digestive function, and a feeling of well-being.
- 3 Social workers are trained to consider the person in the environment, but other mental health disciplines do not necessarily have the same training. But the consequences of trauma are so far-reaching; can we really afford not to make these considerations?
- 4 It is ironic that the system meant to protect the organism can also kill the organism. Researchers call this the 'vagal paradox'.
- 5 I do not have the time and space to delve into who these groups are, their modus operandi, and reasons for existing in this book. There is a wealth of information and disclosure on the internet and in several autobiographical books written by survivors of these programs, many of whom have gone on to become therapists. I would also recommend the books of psychologist Alison Miller for both clinicians and survivors.

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