Review Article

ISSN 2693-2490

Journal of Psychology and Neuroscience

Somatic/Psychic Interventions for The Treatment of Trauma and Addictions

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Submitted : 15 Dec 2023 ; Published : 19 Jan 2024

Citation: Sannes, H. R.(2024). Somatic/Psychic Interventions for The Treatment of Trauma and Addictions. J Psychol Neurosci; 6(1):1-5. DOI : https://doi.org/10.47485/2693-2490.1084

Abstract
The following is from a keynote given at the 2nd International Conference on Addictions & Psychiatry, 2023. A brief description of somatic/psychic interventions is presented, and the common healing elements of these treatment are described. They are resourcing, titration, dyadic neural processing, and repeated exposures over time to facilitate the encoding of new positive neural pathways. A case study is presented illustrating how the therapeutic relationship intersects with the interventions during the treatment of trauma, especially developmental trauma.

Keywords: Post Traumatic Stress, addiction, EMDR, Brain Spotting, Somatic Experiencing, Bioenergetics, resourcing, titration, dyadic neural processing, Ebbinghaus forgetting curve.

Today I will talk about the factors that are necessary for the successful treatment of trauma. As most of you know, co-occurring PTSD and substance abuse is common. Research shows that 46.4% of people with PTSD meet the criteria for substance use disorder. (Schäfer et al., 2017). Addictive behaviors also expose people to more risk for PTSD, as they numb feelings, tamping normal emotional responses to threat. Using addictive substances may allow the prevention of affect all together, by numbing. In order to stop feeling the terror, rage, shame and humiliation from a traumatic event, alcohol and drugs can prevent feeling all together. Addictive substances can also cause us to feel good. Opiates, sex, and dangerous sports can release pleasurable endorphins, briefly providing an escape from feelings of deadness. A really good friend died recently, and I noticed about a month after her death, that I had been reading three books a week. I remembered as a child (I learned to read at 4 years of age) I used books as an escape. I decided it was time to deal with my sadness and found myself crying a great deal, and began to grieve. So, it is not only substances that are addictive, but many activities: like internet use, gambling; and yes, even reading.

When a person feels her life is being threatened, the sympathetic nervous system is activated. If the threat is perceived as so overwhelming that it is useless to fight, and if escape is impossible, flight; then the freeze response is initiated. When a child is physically or verbally abused, which often happens repeatedly, especially by a caretaker, it unlikely that he will be able to fight or flee and this traumatization will often precipitate a freeze response, which leads to disassociation. We humans, while vulnerable to traumatization; we are also very resilient. Trauma is a part of life: accidents, surgeries, war, physical and emotional abuse. Therapists have the privilege of participating with people as they are willing to face their fears, enabling themselves to live a more joyful, meaningful life.

Although there are other modalities for treating trauma, these four treatments are the ones in which I have trained and use in my practice. They are EMDR, Brain Spotting, Somatic Experiencing, and modern bioenergetics. Bioenergtics was developed in the early 60s, when catharsis was being promoted. There are some of these sessions on the internet. I am not referring to them. These four modalities have overlapping aspects that promote the processing of traumatic material. Which one I use depends on the degree of the client's activation and the material that they are presenting.

In order to understand how successful techniques work, it is important to understand how trauma is stored in the brain. It is agreed that it is a somatosensory affective experience, to which we attach meaning. Recent research (Perl et al., 2023) has validated the hypothesis that that traumatic memories are stored in the posterior cingulate cortex as an alternative cognitive entity that deviates from memory per se. The threatening material of PTSD is stored in the form of sensation, affect, images and in the form of words, or a narrative. Interventions for the treatment of PTSD have the goal of reducing the activation, allowing the person to emerge from the freeze response, and enabling the memory to be processed and stored in a more meaningful organized narrative. This is accomplished by processing the right brain material, allowing it to surface without flooding the person, hopefully preventing disassociation. Positive neural connections can then be formed, replacing the earlier trauma driven negative ones.

The factors common to these treatment modalities are:

Resourcing

When working with trauma, the goal of therapy is to calm the body by de-activating the intensity of arousal, and to change the negative driven images, sensations, affect and memories into more positive adaptive thoughts. Our brain is set to go to the negative. This is a biologically over-trained survival tool. Suppose, a young, male deer and his mother go to a pond to drink and one day a tiger appears. The mother doe darts in front of the tiger, eliciting his attention, offering herself as prey, so her young son can escape. This young male has seen his mother attacked and killed by the tiger. He was able to escape and is not traumatized. However, this pond is the only source of water available. So, every time the deer goes to that pond, he will be looking for the tiger. His survival depends on it. This is a classically conditioned response. We know that if a dog is shocked for eating, he will stop eating and it will take many exposures to undo that conditioning. It may take multiple exposures to rewire a negative neural network. I have seen trauma therapists when wanting to resource clients, actually activate them by introducing what the therapist considers as safe. At one workshop, the instructor said think about your pet. One of the person's dog had been killed by a car the day before. It is important that the person find their own resource.

EMDR (Francine Shapiro) is primarily a cognitive therapy that uses bilateral tracking of the eyes, sounds, or touch, allowing the material to be processed and the activation managed. After soliciting the negative statement from a memory, the client is instructed to create the opposite positive after each intervention. This slows the process down and gives the client a chance to imprint a more positive, less activated response. Neuroscientific research indicates that by activating the trauma memory, it creates a reactivation of the negative neural network, allowing it be replaced by the new neural network of a more positive response. (Hayes et al., 2012).

BRAIN SPOTTING (David Grand) directs the client to find the eye position or "brain spot" that corresponds with a specific place in their visual field, which allows the maximal processing of their internal, mostly subcortical, associative process, as they simultaneously become aware of their somatic activation and emotional arousal. It has been verified by (fmri) studies, that points in the visual field which lead to the most activation correspond to places in the brain which hold the most unresolved trauma or conflict, while places in the visual field which produce the least activation represent less or non-traumatized portions of the brain, or resource spots. (D'Antoni et al., 2022). The client generally produces more positive spots; and sometimes, the traumatic brain spot will transform into a more positive resourced area, indicating new positive neuronal connections are being created.

BIOENERGETICS (International Institute for Bioenergetic Analysis) asserts that what happened to us as children greatly affects our adult self-perception and the manner in which we interact in life and current relationships. Bioenergetics analysis sees these traumas affecting one's thought processes, as well as one's body. By becoming aware of the holding patterns in our body and learning how they were formed, clients are encouraged to express their feelings and needs that weren't met in childhood to the therapist. It is also the only technique that directly addresses implicit memory. As Daniel Siegel, a well-known neuropsychologist writes: "Psychological trauma involving the blockage of explicit processing also impairs the victim's ability to cortically consolidate the experience." What this means is that unresolved traumatic experiences, particularly involving disassociation or a lack of processing of the event, can be blocked out of our encoded memory. This helps explain why victims of abuse or trauma often have difficulty recalling aspects of the event. Alan Schore (1994) has written extensively how early pre-verbal childhood events are stored in the implicit right brain orbital cortext. Bioenergetic analysts spend years training how to read these unconscious blocked emotions as they manifest in the body outside of a person's conscious awareness. Before addressing the traumatic material, the client is first resourced in the body by the use of grounding and learning deep calm belly breathing.

SOMATIC EXPERIENCING (Peter Levine) Before processing the material, the client may be directed to locating positive memories to which they can return while processing negative incidences.

These are exercises that I often use separately or conjointly, when first working with trauma, panic, or anxiety.

Bioenergetics Resourcing in the body

This is one of the exercises used in bioenergetics to resource clients, guiding them to an awareness of a calm grounded place in their bodies. If you would like to try, start by:

Placing both feet on the ground, about a hip width apart. Next, place your left hand over your belly button and your right hand over your heart. When you inhale, does your belly or chest rise? Belly breath is calm breath, while chest breathing is more emergency and anxiety, or panic breath. So, breathe into the lowest part of your lower back; and as you exhale, put some pressure on your belly, and as you inhale, let your belly push your hand away. Breathe like that for ten full breaths.

Next, as you exhale, gently push your feet into the ground and as you inhale lighten the pressure. Take another 10 breaths or more, focusing on belly breath and feeling your feet make contact with the ground.

Somatic Experiencing: Positive Memory resourcing in the body

Close your eyes and think about a time when you felt most like yourself and most at peace and ok in the world. It could have been yesterday or when you were two years old, but a time that was the best for you. Now, as you think about that memory, generate an image, like a snap shot, so you can retrieve it whenever you wish. And as you look at that image, notice what part of your body is the most relaxed or least tense. It could be a leg, chest, head, whatever. As you feel the relaxation

does that part of the body feel hard or soft?, cool or warm? Are there other sensations that you notice? If you were to describe the sensation: is it soft like butter? Floppy, smooth? Take a moment and think of some words to describe the part of your body that is most relaxed. Note the relaxation, and try to bring up that image and feeling throughout the day.

Titration

Traumatic events are by definition over-whelming. If we can't win by aggressive resisting, or escape by running away or hiding, then the body elicits the freeze response, leading to disassociation or numbing, which can make disturbing events seems less real, providing relief from agonizing fear and humiliation. When treating PTSD, the goal is to enable the traumatic material to be experienced in such a way that the events can be processed without overwhelming the body/mind and creating disassociation. As the client reports the traumatic material, to prevent flooding, it is often necessary to titrate the material. As you may remember from chemistry, titration refers to a method or process of determining the concentration of a dissolved substance in terms of the smallest amount of reagent of known concentration required to bring about a given effect in reaction with a known volume of the test solution. In other words, the material from the traumatic event is processed in dosed amounts, preventing flooding, which can lead to freezing and disassociation.

If clients become over-activated, I may suggest that they find a safe place in the room to direct their eyes, or engage in a grounding exercise, and/or think of a positive memory.

Bilateral Neural Processing

Recent research (Perl et al., 2023) has validated the hypothesis that that traumatic memories are stored in the posterior cingulate cortex as an alternative cognitive entity that deviates from memory per se. Bilateral neural processing refers to alternating between the highly charged somato-sensory right brain memory of trauma and the positive somatosensory experience, allowing new memory traces to be formed with a more positive meaning for the event. This bilateral processing allows the material to also be titrated, so as not to overwhelm and prevents emotional flooding.

EMDR uses active bilateral stimulation either tactile, audio, or ocular. For the ocular bilateral stimulation, the patient is instructed while holding the target image in mind (a traumatic memory) to move the eyes from side to side following the therapist's prompting or following lights moving on a bar so that the eyes are scanning side to side. For audio bilateral stimulation, the patient can wear head phones with alternating sounds, and for tactile bilateral stimulation, they can hold plastic pulsers in their hands that buzz an alternating intensity that is comfortable for the patient. There are various theories about why this treatment is so effective at neutralizing the emotion connected with a traumatic event. A primary hypothesis is that the bilateral stimulation moves the material back and forth from the right to the left brain; and thus, changes how the traumatic material is stored in the brain. The traumatic emotion and images may become more intense and detailed before they then gradually diminish until they are no longer problematic and no longer determine the patient's view of themselves and the world. In other words, a patient who has been raped may think and feel, "I am not safe". On completion of EMDR processing she may cease to feel fearful and may be able to verbalize, "I am safe" or at least, "I am as safe as a person can be".

Brainspotting locates target points, positive and negative, allowing the brain to process the material in different areas, creating a more positive neural network.

Somatic experiencing actively engages the client in creating a more positive outcome, enabling the activation of the fight/flight response. After eliciting the sensations, images, behavior, affects and meaning (SIBAM) that are associated with the trauma, the client is encouraged to create a new outcome, which enables them to avoid freezing or disassociation. The classic example might be of a person in therapy recalling being verbally harassed and bullied on the playground. The therapist notices that the client's legs are starting to have incipient movements, and asks the client what the body/mind wishes. She may come up with an image of being chased by a tiger and escaping. The traumatic memory is now replaced with the vision of escaping.

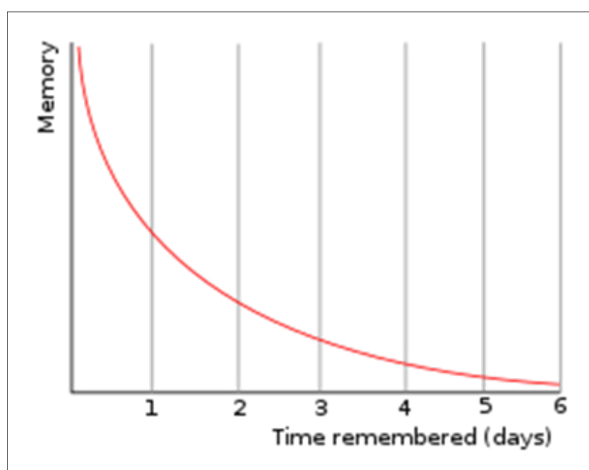
Bioenergetics. The client during a bioenergetic session dealing with the same issue of bullying or verbal harassment generally produces a more relational solution. At first, the therapist might help her be aware of the tension between the shoulder blades, indicating held back anger and aggression, or her uncomfortable tight neck and raised shoulders, fear. As the client becomes more conscious of the tension, she is encouraged to release it, enabling the affect to emerge. If it is anger: the client may be aware of wanting to punch the person or fear: run and hide. The therapist's empathic seeing and resonance with the feelings, usually enables the client to find a new solution. She may imagine seeking help from a teacher, or parent. Sometimes, I become the person protecting and standing between the bully and my client.

This is an example of another relational solution. My client, Joanne (a pseudonym) was kidnapped, when 12-years-old and raped over several hours. Every time she started to protest or fight, the attacker, choked her and physically tortured her. She is now 19-years-old and reliving the terror in my office. As she stands in the corner, afraid the rapist is going to enter the room, Jake, my Jack Russell dog spontaneously, stands in front of her, growling at the door. We look at him and both start laughing. Now, when she begins to talk about the rapist approaching, we both look at Jake and smile.

Memory Consolidation

Memory consolidation refers to the process by which a temporary, labile memory is transformed into a more stable, long-lasting form. Memory consolidation requires a 4-6 hour reconsolidation period This is a really important concept. In

order to retain the positive result of a therapy session, it is necessary to be able to have a memory locked in the body/mind.



Ebbinghaus Forgetting Curve

As you can see there is initially a steep drop in retention of the new memory. Repeated exposures are necessary to change the old defensive beliefs.

Sometimes, after a particularly deep session, when a client is feeling a new sense of calm and aliveness, it is important to ask them to pay attention to what they are experiencing in their body and to notice what part of their body is most relaxed. I ask them to look around the room. Often the client will report that the room seems brighter and I look kinder and softer. I instruct them to during the day, bring up their body memory of the pleasant feeling they had during the session.

As isolated facts are difficult to remember, I will now present a full case as it is much easier to remember material that is embedded in a narrative; and hopefully, you will leave with a deeper understanding of it. The facts about the client are disguised except for the traumatic material.

Ben (a pseudonym) presented with complaints of pain in his neck and back, anxiety, and depression. He used various substances to numb himself, primarily marijuana and cocaine. I referred him to a psychiatrist and he was placed on anti-depressants, which he would take for a time; and then stop, and with encouragement, resume, but didn't like them. During therapy he recalled an incident in when he was 11-years old and was encouraging his younger brother to masturbate him. His father found out; and in a rage called him a "faggot" and peed on him. After that incident the client withdrew and became depressed. As a teenager, he struggled for several years with excruciating pain in his head and jaw. The prefrontal region and limbic system are not activated separately. They are functionally connected and contribute in a combined fashion to processing pain, both emotional and physical. Relentless physical pain can decrease the capacity for pleasure. Ben felt even more depressed and damaged, and his defensive isolation minimized opportunities for a more accepting empathic mirror, as Ben described his mother as cold and not empathic, while his father had been the warmer more nurturing parent. Neither of his parents were providing the necessary relational experiences that Ben needed to develop a more compassionate, confident sense of self. It was several years before a correct diagnosis was achieved; and until then, the pain was considered psychosomatic. He finally had corrective surgery, which relieved much of his pain. While the surgery reduced it substantially, the body still remembered and at times he suffered from nerve zings flashing through his head and a painful aching tight jaw. Clients with this traumatic history and with so many years of suffering believe that their story has been written and have a difficult time imagining a life without suffering. It is no wonder that they turn to substances to relieve themselves of the relentless physical pain, shame and humiliation.

When Ben talked about his physical pain, I empathized with how much of his life had been dealt dealing with it. He agreed to try some of the somatic exercises and began finding relief from his painful physical sensations. These are similar to the trauma exercises in which focus is on the parts of the body that are more relaxed with the idea of creating more pleasurable neuronal pathways. I had discovered this process after dealing with a failed back surgery, that by focusing where the pain wasn't, I was slowly able to get up off the floor and stand, and after several months, even began walking. Ben also found this practice helpful, and eagerly committed himself to the exercises. Some therapy sessions he chose to only talk about the success he was having; how he could contact and change the painful sensations in his head and jaw; and then later open up segments of his spine. He was quite proud of his new mastery.

Ben as a young child had felt close to his father, as he had been the warmer, more nurturing parent. He was hurt and angry about his maltreatment from him, felt humiliated rejected, and too damaged to be loved again. We processed this material over several sessions, using techniques of EMDR and brain spotting. He was feeling more hopeful and agreed to try a treatment program for his substance abuse. After three weeks he stopped the program and began using. During this time a friend came to stay with him who was an artist and introduced him to painting with oils. Ben was surprised at his own talent and excitedly shared his work with me. For the first time in many years, Ben allowed his father to visit. He was impressed by Ben's talent and offered to help with supplies and to market his art. As Ben became more secure in this relationship, he began reporting fond memories of times spent with his father.

And then, Ben met a woman, Alice who would only be with him if he promised not to use drugs. He struggled to quit and I thought he was doing quite well, although at times he would relapse and I would encourage him to try again. He was motivated, as he did not want to lose Alice. He was re-writing his story from being an isolated teen in chronic pain to now being a successful artist, with a loving woman and a supportive father. Sometimes, he would bring up his past hurt from his father, and at the same time discuss how close and warm he felt with him now, since he had begun therapy. The old past trauma

was being replaced by a positive relationship in the present. Six months ago, he had a guided ketamine session. He was excited to tell me that he had discovered during that session that I loved him, that even when he was using, I still loved him. He said he had never felt that anyone who really knew him could have deep caring feelings for him. At the time of this presentation, he has been sober for a year. He now has a new neuronal network. He is no longer the humiliated boy whose father called a "faggot" and peed on. He is loved and cared about by his dad, has a loving woman as his partner and is a well-respected artist. He is experiencing a life of pleasure and the old negative neuronal networks are losing their saliency. He has replaced the pleasure of substances with the joy of living a meaningful life.

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