

## **The Physiology of Shock and Trauma And Somatic Methods of Treatment**

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The effects of shock and trauma and the impact this has on clinical treatment are now becoming recognized in the field of psychotherapy. Knowing about shock, how it appears in the psychotherapeutic relationship, the subtlety and pervasiveness of its presentation, and how to work with it is the intent of this article.

My clinical practice, hospital, school, and agency work have given me years of exposure to treatment of trauma. To understand the difference between trauma and shock, I explored neurobiology and the early imprinting of the nervous system in the perinatal time; before, during and following birth. It seems these imprints lay down a template of response under stress, as well as later events, that can spiral a client into a shock response. I believe full treatment must include body support for sequencing the pattern to completion and thus resolution. As former director of the Body Psychology track for the Somatic Psychology Masters program at Naropa University in Boulder, Colorado I spent years teaching students how to process information in a body-based manner. Since then I have received my Ph.D. in perinatal psychology and human sexuality and opened Colorado Therapies and Aquatic Center. This is a full service clinic with a focus on families, early attachment, and sensory-motor development. I am also a Body-Mind Centering® teacher, a licensed professional counselor, and certified as a BodyMind Psychotherapist. I've written this article because of the increased effectiveness I've seen occur in treatment when there is awareness by the clinician of how to process shock through the body.

It may be helpful to know my background in order to understand my perspective in this article. Since the late '70's I've worked as a therapist in private practice, in hospitals, clinics, and in public schools. Always I have had an interest in the body's integration of the emotional story, and how it was part of the expression of the soul. This interest led to continued and diverse studies in family therapy, personal story exploration through theater and art, and body consciousness. I have studied bioenergetics, transactional analysis and neo-Reichian work and then trained in family systems work, getting my MA with the Leadership Institute of Seattle. I moved deeper into the body based fields, studying with and assisting Bonnie Bainbridge Cohen, who founded the School for Body-Mind Centering®. I also trained with and assisted Susan Aposhyan who developed Body-Mind Psychotherapy. I have experienced the work of colleagues in the field of shock and trauma, such as those connected with IBP, Hakomi, William Emerson's work, Ray Castellino, Myrna Martin, the work of Bessel Van der Kolk, and also dialogued with practitioners about their approaches.

One thing I have noticed and wondered about in the field is that there can be a propensity to organize around shock wherein the nervous system becomes hyper vigilant in identifying shock and being seen as "shocked" and damaged. I have experienced this both as a trainee and as a

client and would caution all of us in the field to examine how we may unconsciously be activating the shock field in this direction. Rather, I would hope the focus is placed more strongly on the support to sequence shock through the nervous system and to find the path of ease even during the treatment of shock.

The idea of a path of ease, and that support precedes movement, meaning in this case that shock will heal organically when the biological and conceptual/psychological/emotional supports are in place, was introduced to me through the work of Bonnie Bainbridge Cohen and the School for Body-Mind Centering®. The further work with Susan Aposhyan in Body-Mind Psychotherapy has supported the psychological work that guides clients to find ways to stay present with shock and allow it to sequence without reactivating a traumatic loop. The combination of this work and my own exploration has given me tremendous personal healing and clinical resources to support awareness of healing modalities for trauma.

This article is a combination of personal story and effective intervention methods. I hope it will inspire you to explore the effects of shock patterns both personally and in your professional sessions. To help you more thoroughly understand and integrate the aspects of shock awareness and treatment this article addresses, I have started this article with the following experiential exploration. This will allow a relevancy of embodied learning to be in the foreground as you read this, and you may want to read this thoroughly when you have the time to do the experiential exploration.

*Experiential exercise: Gently introduce awareness of shock into your kinesthetic body by listening and speaking. Slowly say the word 'shock' a few times. Notice how the sound of it has a certain power in its' beginning, a richness in its' middle, and an abrupt interruption at its' conclusion. This power, richness and interruption of energy are literally what happens in the body during the nervous system response we call shock. Shock response occurs when we believe we are in life threatening circumstances. The organism of our body overrides its own nature in order to protect and sustain life. The willingness of an organism to interrupt its natural power and expression is based on a healthy instinct to survive.*

Before I give you a thorough physiological explanation, let's first look at how to recognize shock. By definition shock is a jolt, a scare, a start or a terror, a jostle or a surprise. Shock can bewilder, astonish, daze, paralyze, stun or stupefy us. These responses are symptoms of a shock response. Trauma is more often a one time event, and can be processed through in the moment if there is or enough use of the balance of sensory and motor nerve response in the body. An event can be relieved of its traumatic impact if there is a supportive person present, such as a parent being able to say to her child, 'this is difficult, but I am here with you'. Shock is different in that it sets up a template pattern that future experiences organize around. Shock stacks up and when it is triggered a person will sequence all the way back to feeling the sensations and the enormity of the initial incident. They will bring to the current moment the response from the past that contains the power and magnitude of the original seemingly life threatening situation that caused

the frozen response. When you observe disassociation in a person, intensity of response beyond the current circumstances, a vacant or zoned out affect, hyper-vigilance, or depression, look for an undercurrent of shock in the nervous system.

Shock interrupts one's ability to stay present, relational, and oriented in present time. Shock is the nervous system's protective response to overwhelming stimuli. It is a healthy mechanism that keeps us from endangering ourselves in what appears to be life-threatening circumstances. Shock heals when there is enough support present in the environment and in our body for the stimuli that was inhibited to sequence its way to completion. Bonnie Bainbridge Cohen, founder of The School for Body-Mind Centering®, describes shock as a reversal of the nerve firing.

To understand what this means, let's look at the normal flow of information through the nervous system. In a non-shocked state, the nervous system is designed to receive sensory input, digest it, and relay out a motor response. Sensory nerves input stimuli and motor nerves respond by directing muscle and organs into action. Inside the bones of the spine from the skull to the tail is the central nervous system. At the very center of this column is gray matter made of nerve fibers called the gray commissure. In cross section this looks like an 'h' with two legs pointing towards the front of the body and two towards the back. Sensory nerve impulses come in the back two legs, or horns, and go into the center of the gray matter, which houses internuncial nerves. These nerves relay the sensory input directly into motor responses, as in a reflex, or up to the brain in more complex firings. The brain assesses, filters, and sends down a motor response that goes out into the tissue and produces an action. Most simply, this is a sequence of sensory input from the back horns, which then sequence through the internuncial nerves in the center and finally fire out the front horns via the motor nerves. Let's call this process a sensory-motor loop.

In order to understand how fundamental this sensory motor sequence is to behavior, simulate the feeling in your body by doing the following experiential exercise:

*Experiential exercise: Stand and place your hands out behind you. Use your hands and arms to simulate the nerve fibers of the body. Imagine that they are the nerve pathways which include sensory nerves that channel into the spine, internuncial nerves that take the sensory input through the center, and motor nerves that move out the front of the spine and effect the actions of the muscles and organs. Imagine sensory input and let it stream through your arms until you have a felt sense of this energy. Allow it to flow through your arms and into the back horns of the gray commissure at the center of your spine. Feel how this impulse goes into your core, passes through your internuncial nerves, and then motors out your front as you swing your arms and bring your hands to the front of your body. You can motor further by stepping forward as you do so. Repeat this a number of times. Gather the sensory impulse from behind and motor it out the front. Do this until you feel the sense of satisfaction that develops from the organic flow of the sensory-motor loop.*

*Next simulate the experience of shock. Feel the sensory impulse come in through your hands in*

*back, take it to your center internuncial nerves, and hold it there. Don't let the sensory impulse have a motor resolution. Do this a few times and notice what happens to your emotional response. What do you do as your body holds in the nerves? Look for signs of tension, anxiety, and discomfort, and notice what happens to your breath. What you are feeling is the state produced when a sensory impulse is inhibited in its organic expression. Find relief by repeating the first exercise where you simulated the flow of the sensory-motor loop. Let the sensory impulse sequence to a motor response. Notice how this return to flow relieves and renews the body. Take a few breaths to complete the exercise.*

Let's investigate how this process of shock works. When you simulated a shock state, what literally happened in your body is that the sensory nerve impulse was stopped when you held it in the internuncial nerves. This gave your body the message that it was unsafe to feel or express the impulse. Impulses are electrical in nature, are strong, and need to go somewhere. When the sensory impulse is inhibited, it appears to back-bleed down the sensory nerve fibers and is stored in the body tissue next to the motor nerves. This held feeling and reversal of impulse is what dampens energy flow and escalates the emotional body into feelings of withdrawal or anxiety.\*

Shock patterns from the past can become visible during certain forms of bodywork. Deep tissue bodywork can awaken unconscious memories when touch triggers the stored past impulses that were unexpressed. Highly emotional cathartic work often engages a stored shock response (and helps it sequence to completion, thus freeing the nervous system). This can be useful, however, the precaution and danger in repeated cathartic work is that the nervous system is habit forming. Repeated catharsis can make a neural pathway that gets overly used and limits the full resolution of the shock. You can tell this is happening when emotional expression leaves one drained and exhausted rather than renewed.

Some theorist believe that shock happens not just via the nervous system but includes the glandular system known as the endocrine system. Bonnie Cohen believes the endocrine and nervous systems are directly linked as the messenger systems of the body; the endocrine sending the chemical messages through the fluids, and the nerves sending the electrical impulse through the nerve pathways. Bonnie speaks of them as a linked system called the neuro-endocrine system and believes that what we call shock in therapy terms happens physically when we first hold in the fluid of the lymph, and then reverse the impulse in the nerves.

The endocrine system is powerful and is involved in our basic human drives. These include the energy of sexuality through the gonads, the ability to fight or flee through the adrenals, the meditative and visualizing ability of the pineal gland, the empathy of the heart, the vocal support via the thyroid and parathyroid, and other various aspects. A powerful cathartic expression engages the endocrine system and, because of its power, appears to be coming from the core. Unfortunately, catharsis is a seductive form of treatment because this heightened expressive state feels 'good' and appears authentic to the client, especially someone who previously has not had full range of emotional expression available. However, from working with individuals over time,

and in my personal embodied development, I have come to question the authenticity of this

\* \* ♥ Annie Brook, [www.anniebrook.com](http://www.anniebrook.com) 1-888-865-3125

origin. Think of it like this. When there is a highly charged state, people often contract. They hold in their musculature and organs, producing an inner and outer tension. This makes the container for the large energy smaller, which puts more pressure on the system. Catharsis then opens the body like a pressure release valve. However, it doesn't modify the instinct to contract and withdraw around energy rather than soften and feel sensations. I now believe that a highly charged expression can sometimes be non-sequenced energy simply repeating in a habituated trauma loop.

The following personal and clinical examples may help this understanding. In my own journey of embodiment, my first level of response to stress was often tears and grieving. I would find a way to sadness. My early training in the neo-Reichian work used both breath and touch to build a body charge and then help release it. Because I have a strong endocrine system, the depth of tears was powerful. However, over time this expression did not provide resolution or support for certain life issues, and it left me temporarily rejuvenated but overall exhausted. I began to feel this was a frozen place for me and sought other forms of training and understanding.

Eventually as a client, I had to "train" my therapist to ignore my tears and help me stay present to deeper levels of uncomfortable sensation. This opened sensory-motor pathways, which included the expression and resolution of fear and anger. As I learned to stay present and aware during discomfort, and how to sequence energy, my expression was sometimes smaller and less powerful but more deeply genuine. I felt issues resolve rather than repeat.

As I learned this way of resolution in my own body, I began to explore the sequencing of shock and trauma expression in my clinical practice. The goal was not to revisit trauma but to open to energy as it emerged and sequence it from the core out to the periphery and back, opening to organic expression. Sometimes clients would go towards high catharsis. Initially, I saw this as a helpful way to clear the neural paths and support sensation to sequence into motor expression. However, when a client's tendency was to repeatedly use highly charged states, I noticed that their issues did not resolve. I began to guide them towards a full sequence of energy rather than a catharsis, and open up more of the body to host energy instead of condensing and then pushing out with the fuel of the endocrine system.

To do this one has to support the integration of emotions, sensations, and cognition. Supporting clients to be present with uncomfortable sensation means they must relax and open the muscular container rather than condense around an energetic charge. Cognitive integration includes the ability to stay present with these uncomfortable sensations and bring in thought and awareness. A balance of thinking, feeling, and acting seems to provide the most support for integration and resolution of shock patterns.

For healing to occur, the impulse that was blocked during shock needs to sequence with support of many body systems. This includes not only the endocrine system but other body systems, such as the organs and fluids. With the organs present, the emotional experience can be felt through the parasympathetic nerves and be digested from a non shocked state.

We have talked about shock and how it appears in clinical treatment. Let's look at why it occurs. The innate design of shock is one of protection. In cases of emergency or crisis it is important to override emotional states of fear or personal concern and go into action. Sensory input that would lead to an emotional expression gets inhibited, and other sensory impulses that lead to safety actions, such as fleeing or fighting, are supported. This is obvious in conditions of war where a soldier must fight or flee to remain safe rather than freeze in shock. Yet the aftermath of over ridden fear, horror or anxiety is stored trauma, most recently seen in Vietnam Vets, and is hugely detrimental to the soldiers well being. Shock can also be produced from simple emotional inhibitions that stem from family patterns. If a family has a covenant to not feel anger, the impulse to get angry would be thwarted because breaking the family code seems more life threatening to a person than expressing the anger. Or if a child is repeatedly yelled at or worse, beaten, by a parent but cannot flee or fight because of their dependency needs, the sensory impulses are not motored into expression. The internuncial nerves would send the sensory impulse back down the sensory nerves and it would get stored in the tissue, thus interrupting the flow of the sensory-motor loop.\*

When the sensory-motor loop is open we are able to shift emotional states and have responses congruent with the situations we engage in. This is most obvious in infants where a baby will cry one minute and laugh the next. When you are with this infant, their behavior feels quite congruent. Their sensory-motor loop is fluid and engaged without much programmed inhibition.

How do we treat shock in psychotherapy? The most effective way of treating shock is to allow it to move back through the body so the neural pathways are cleared. Bessel Van Der Kolk, a leading expert on shock treatment insists that body based healing is essential. Bonnie Bainbridge Cohen works to bring in the support in the body through breath, movement of fluids and muscles, and connecting with developmental patterns that promote organic flow and expression. Her belief is that by bringing in the support of the body, a person will naturally find their path to movement (rather than remain frozen in shock).

In physiological terms, to heal or integrate shock experiences means that the stored reversed nerve energy is sequenced through the nervous system at a pace that is self guided and directed by the client. The therapist's role is to hold the container and guide the client in movement so that their energy can sequence. I believe that shock takes its own time to heal and that the addition of body based support is a key ingredient towards full recovery. Physical movement supports emotional processing, and can be done in a very gentle manner. Simple modeling by breathing and responding to a client's intense experience, helping them shake or soften or respond to intense energy rather than hold it, supporting them to relax and utilize muscles and

organs, rather than making them tight, will all support the body to sequence through a held pattern. When there is enough body support, shock will naturally heal.

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Here I am speaking of movement rather than touch. Depending on the type of shock, touch from others can re traumatize a client. Instead, bring in movement sequences and breath. This is very subtle work. Usually there are many behaviors in place meant to divert the attention away from the wounded area. Simple things can be done and are best taught through modeling. Breathing is key here, as well as yawning, stretching, and being awake in your body. Being able to stay present with the intensity of a clients' experience and acknowledge it with simple words, such as 'that seems scary', or 'my heart hurts when you talk about that', or 'this energy is intense' is also key. Acknowledging verbally is also a way to support you as therapist to stay present rather than having to hold your own feelings. When therapists hold feelings, that held energy is felt by the client and will influence them to also hold their energy.

Susan Aposhyan uses sequencing energy to the endpoints of the body, such as the face and head, hands and feet, and the pelvic floor and tail, as a way for energy to connect from the core to the periphery. You can do this by using the image of the star fish where the mouth is at the navell, and suggest clients feel their bellies and let impulses travel from belly to hand, foot, tail, face and head. Let them discover how an impulse can originate in the foot and travel to the navel and express itself out the hand. Support the full range of connection so impulses are not overly held, but felt and sequenced. Especially helpful is to give permission for the pelvic floor to feel and the face to express. \*

You can show clients how to use the developmental startle reflex called the 'Morrow Reflex' to sequence energy. This is the expression you see in an infant when startled. The arms flail back. The chest arches and the eyes dilate. The infant gasps or yells. To regain equilibrium, the infant then brings its arms forward across the chest and breathes deeply, as it embraces its' mother. Have clients practice sending energy out with breath and movement and let fear vibrate. Then soften and draw energy back into the core to feel protected and nourished. What this does is gather the dispersed energy that is scattered out from the core during shock, and restore a sense of peace and centering by being present in the midline of the body.

Learning to sit on the edge of a shock gap and not dive into the middle of the shock response is also useful training. I use the word gap because shock is literally a gap in consciousness as well as sensation. By sitting on the edge of the numbness or hyper-alert feeling, one can begin to flesh out the location of the shock gap and fill it in. I often have people lie on the floor on their belly, breathing and feeling the support of the earth as it comes into their organs. If they are hyper vigilant, I suggest they feel how to yield into the floor and gain the support on their organs of the earth beneath them. If they are lethargic, depressed or collapsed, I have them bring in more support by drawing in their organs so they can feel and meet the support offered by the floor. In

upright postures sitting or standing, I have clients put a hand on the part of their body that feels open and supportive, increase this energy and then sequence it to parts that are afraid or held. As a person sequences energy that was previously held or frozen, you can see them relax and gain more of an alert yet peaceful presence. They can orient towards present time and regain the ability to stay relational with themselves and with you.

This is the goal of somatic psychotherapeutic work. When people regain a sense of their fullness of sensation, cognitively assess what is safe and what isn't, and make choices related to present time circumstances, they have sequenced out the shock and reintegrated their sensation. From this they can have a fullness of response to ongoing life circumstances. \*\* ♥Annie Brook,  
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