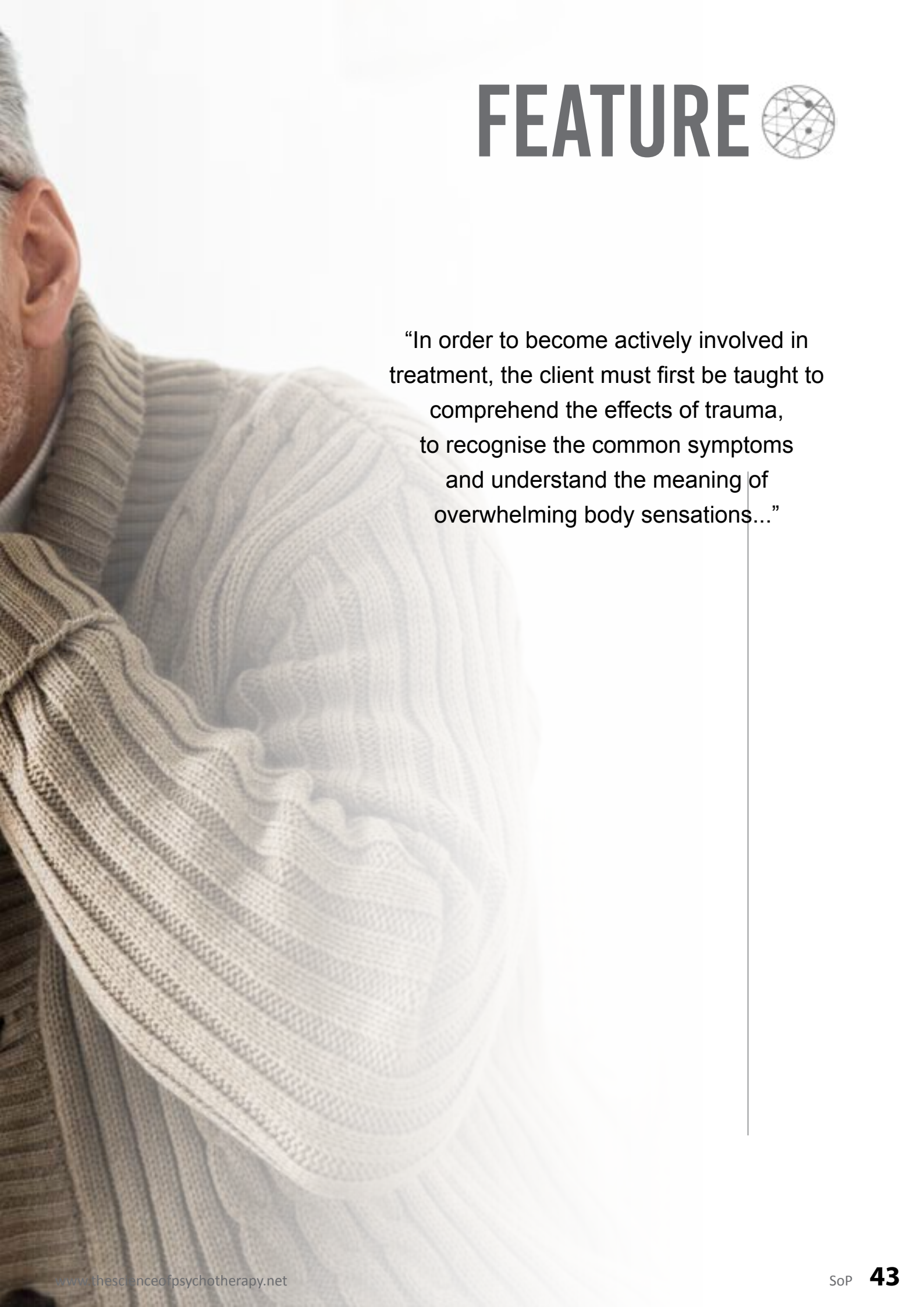
QUANTUM EMDR (QEMDR)

A guide for EMDR therapists

By Dr Art O'Malley



FEATURE

"In order to become actively involved in treatment, the client must first be taught to comprehend the effects of trauma, to recognise the common symptoms and understand the meaning of overwhelming body sensations..."

Part 1

History, Theoretical Basis, and Practical Application

Introduction

The concept of quantum entanglement, or QE, was proved by 3 experimental physicists working independently. They were awarded the Nobel Prize for physics in August, 2022. Nikola Tesla proposed in the 1930's that Tesla waves can travel faster than light. Is this an insight into how people, and also some in animals, especially pets, sense the exact moment a faraway loved one dies. Research at ETH Zurich demonstrated QE at the macroscopic scale of 16 microgram leading to the concept of Quantum Consciousness. It is from these and the following concepts, principles and ideas that I have developed QEMDR. Two important points:

1. *Emotional & Mental Development & Reprocessing* was the name proposed by Dr Francine Shapiro for EMDR in her forward to the book "Small Wonders", by Dr Joan Lovett in 1999. She felt that the term Reprocessing Therapy would fit as an overall description of what EMD and later EMDR aimed to achieve.
2. I have researched the integration of the quantum field of psychotherapy with EMDR since my research paper ,"The Art of BART", was presented at the ISSTD annual Conference in Montreal on November 11 2011. This has led to the development of my company Quantum EMDR Ltd which was incorporated on 1 March 2023 in the UK.

The key hypothesis is:

"Quantum Entangled Memories are Desensitised into Reconsolidation, Lightening Trauma, and Dissociation."

In 1997 Remy Roth discussed Quantum Physical Medicine as involving changes in consciousness from the inside out. Starting with the cognition of the belly or gut brain, there was a link to the brain via the brainstem (the central nervous system) and also a spreading into central coherence of the electromagnetic field of the heart brain, or cardiac nervous system, which radiates 5000 times more powerfully than brainwaves. From this understanding, it is possible to derive a quantum framework that can describe human behaviour.

Quantum entanglement is involved in the emergence of cognition, feelings, sensations, emotions and movement from neural activity. When considered in the context of time in quantum mechanics, imagination in the quantum field is an opportunity to remake memories and experiences with a better ending than existed at the time of the macro world experience. QUANTUM EMDR can become a Quotient of assimilated, noteworthy traumas linked to unprocessed memories providing emotional and mental develop-

mental reconsolidation as psychotherapy. This is a way to combine the theory and practice of quantum physical medicine with the developments in EMDR since it was first suggested by Dr Francine Shapiro in 1987.

I will describe the specific process of QEMDR in the latter part of this article, but first, some of the history and theoretical background.

According to the Judith Hermann Model (1992), the end goal is to achieve integration of the now metabolised traumatic memories into long term episodic memory. The client/patient will subjectively report the memories to have shifted from an ever-present distressing emotionally charged meta-representation in front of their mind's eye to one which they now know happened in the past, and which is filed away in the cerebral cortex as memory. Once the emotional charge of the traumatic memory has dissipated following QEMDR, the memory can be filed away securely in the filing cabinet of normal memories via the hippocampus. I use a three-dimensional model of the brain to explain the process of reprocessing traumatic memories from the amygdala and limbic system to the cortex via the bilateral cerebellums. The distress and upsetting emotions have dissolved and new neural networks have been activated to transfer the information from the somatic representation in the brainstem and limbic system to the hippocampal neurons. This removes the emotional roadblocks that have maintained the patient/client in a permanent state of re-experiencing, avoidance of triggers and altered states of arousal. Prior to QEMDR psychotherapy the client's level of arousal would oscillate from hypervigilance to a state of being frozen in fear or dissociation (see figure 1).

Integration of somatic states.

Dissociation Model
(O'Malley, 2021 revised)

Hyperarousal - Window of Tolerance - Hypo arousal associated with dissociation.

A: Hyperarousal

RAPIDS:

Racing thoughts, **A**nger fuelled by

Adrenaline (fight flight or freeze)

Personality fragmented

Impulsive

Distressed

Swept away by the floods of emotion while in danger of being hit by the rocks

B: Window of Tolerance

CALMER WATERS

Conscious **A**ware

Level-headed **M**indful

Emotions

Reconsolidated

Window of **A**ffect **T**olerance **E**nergy **R**egulated and **S**tabilised

C: Hypo arousal associated with dissociation

Freeze	**F**rightened
Reaction	**E**motionally shut down
Oblivious	**A**nguish
Zoned out	**R**igidity
Emotionally **N**umbed	

: The images above describe the Dissociation model of RAPIDS, CALMER WATERS and FROZEN in FEAR emotional states (O'Malley revised in 2021 from original in 2011).

The interplay between top-down and bottom-up reprocessing holds significant implications for treatment of traumatic memories. The Hyperarousal response of white-water RAPIDS can be thought of as: Racing thoughts; Anger outbursts fuelled by adrenaline surges; Personality fragmented; Impulsive; Dissociated and Swept away by the floods of dysregulated emotion while in danger of being hit by the rocks.

Normal arousal, or CALMER WATERS, can be thought of as: Conscious; Aware; Level-headed; Mindful Emotions Reconsolidated; Window of Affect Tolerance; Energy Regulation; and Stability. When the dorsal vagus nerve becomes activated, the patient experiences a dissociative hypo-aroused state – they are FROZEN in FEAR. When the Window of Tolerance is narrow, the patient's state is one of frequent dissociation and QEMDR is a useful approach to enable reprocessing by widening the client's window of tolerance.

The pacing and titration of EMDR is most successful when working with the client/patient at the upper and lower edges of their window of affect tolerance. It is explained to the client/patient that traumatic memories can range from a small trauma little 't' wave to a massive Trauma or big 'T' Trauma which can be like experiencing a Tsunami. Everyone has different resources or boats with which to withstand these waves of

traumatic and stressful experiences.

Metaphor for hyper and hypo arousal and dissociation:

Trauma is like experiencing a storm at sea. Dependent on the vessel one sails, these waters can either be rocky or smooth sailing. The stronger the vessel, the more resourced the sailor is to navigate the storm. Facing the storm with the adequate resources is the first step in helping the client/ patient sail through. Once the storm is over and the traumatic memories have been reprocessed the client/patient enters CALMER (Concentrated, Attentive, Lighter, with Memories, Emotions, Reconsolidated) waters and is capable of moving on. The client can now begin to work on decreasing the sense of shame and alienation, developing a greater capacity for healthy attachment, and taking up personal and professional goals that reflect how he or she has made meaning out of having survived, and healed from, traumatic abuse. Overcoming fears of normal life, intimacy, and healthy challenge and change become the focus of the work. As the survivor's life becomes reconsolidated around a healthy present and healed self, the traumas are increasingly perceived as farther away. They are experienced as part of an integration of self but are no longer a daily focus of distress, as compared to their state before the commencement of treatment with combinations of QEMDR Psychotherapy with Sensorimotor Psychotherapy, Neural Desensitization Integration Therapy and Deep Brainstem Reorienting.

Information for EMDR Psychotherapists

During trauma treatment, it is important for EMDR psychotherapists to consider the following three levels of information reprocessing: cognitive, emotional and sensorimotor.

1. **Cognitive:** During the 1980s, Aaron Beck (1921-2021) moved from a psychoanalytical framework to one based on negative thoughts or beliefs. Cognitive processing is the capacity for conceptual cognitive information processing, reasoning, and decision-making. It necessitates the ability to observe and abstract from the experience. Beck's negative triad became the *sine qua non*

for diagnosis of a depressive disorder.

2. **Emotional:** Emotional processing is the capacity for a full range of feeling and affect, as well as the articulation of that feeling and affect. Emotional processing adds emotional motivational colouring to sensory, motor and cognitive processing. When Francine Shapiro developed Eye Movement Desensitisation or EMD in 1987, she was heavily influenced by her discussions with psychotherapists Richard Bandler and John Grinder (Linguistics professors at University in Santa Cruz) (Los Angeles Times, Feb 13, 1985). In San Diego, NLP training was handled by the non-profit Human Development Institute situated in Mission Valley. Dr Francine Shapiro, formerly a high school English teacher, was the founder and executive director of the institute.

Figure 2: German psychiatrist, Dr Arne Hofmann (among others) devised the DeprEND protocol to treat clients with Depression using EMDR psychotherapy. It is now recognised that one of the consequences of untreated trauma symptoms or PTSD is depression, anxiety and obsessive-compulsive disorder.

The Institute sought to research what makes certain people super achievers. Shapiro stated, "My research into NLP started when I was told I had cancer...Everything I learned about my cancer showed it was a stress related disease."

Dr Francine Shapiro went on to experiment with visualisation techniques to assist in her gaining remission from cancer. This included imagining that the cancer cells were being mopped up by myriads of knights on horseback with shining armour who were like her white blood cells able to annihilate the cancer cells with their lance mimicking her own immune system. She taught NLP at the institute and explored the way people organized their experiences i.e., thoughts, feeling and behaviour. NLP theory hypothesises different perceptual preferences in clients. It states that approximately

Dr Francine Shapiro

sixty percent of the population are visual and remember in pictures. Thirty percent of the population are auditory and remember the sound of things. Finally, ten percent of the population are kinaesthetic and primarily remember how things feel. Practically all people are a combination of these perceptual styles. This is formally described as NLP *representational systems*.

Dr Francine Shapiro was frustrated at the lack of acceptance of NLP by the scientific community. This was mainly due to a lack of scientific evidence for NLP in peer reviewed journals. Following a lecture to students she noticed that at lunchtime she had a series of troubling thoughts and feelings. During the break she went for a walk around the grounds. This involved walking in a circle around a nearby lake in a wooded area.

When she returned to give the remainder of the lecture, she noticed that she no longer had the troubling thoughts and feelings. Based on her NLP training she wondered what behaviours might have led to this positive change in her thinking and feeling state. She concluded it was something to do with the effects of looking at the movement of light in the water. I believe she came to a fundamentally wrong conclusion in terms of the aetiology of her improved mental state.

In Oct 2002 I attended Level 1 training with Gerald Puk PhD from the EMDR Institute. I completed Level 2 training with him in October 2003. Joanne Morris Smith Consultant Child and adolescent Clinical Psychologist become my EMDR Supervisor. I achieved Accreditation as an EMDR Practitioner in 2006. I attended *Small Wonders: Healing Childhood Trauma with EMDR* run by Dr Joan Lovett on 22 May 2004 followed by the EMDR Europe Accredited course *EMDR for Children and Adolescents* Level 1 and 2 delivered by Joanne Morris-Smith. I have attended many EMDR workshops integrating different therapeutic approaches. Dr Michel Silvestre presented a 2-day workshop on using Family Therapy and EMDR and Gerald Puk presented Treating Chronic Dissociative Patients with EMDR. (full details of other EMDR training and presentations available on request).

From April to June 2021, I attended parts 1, 2 and 3 of EMDR training run by Michael Paterson from the EMDR institute. According to his website, emdrmasterclass.com, training now requires the completion of 52 hours of lectures, practical experience with the facilitator, and EMDR case consultation. This training meets these requirements via part 1: 3 days or 21 hours; part 2: 1 day or seven hours; and part 3: 3 days or 21 hours. The training is completed by a group case consultation half day or three hours. I noticed that in the 20 years since I did my basic training in EMDR that an additional element was introduced in part 2 involving 1-day training. I liken the basic rules and protocol of EMDR to learning the moves of the chess pieces on the chessboard: it then takes a lifetime to achieve Grand Master status. Likewise mastering the intricacies of EMDR

is a lifelong challenge.

Advances in human evolution

The history of homo sapiens is that we have evolved from animals on four legs to walking on two legs. In the last 50,000 years our frontal lobes have increased in size by forty percent in volume. This has led to enhanced neural networks between our peripheral and central nervous systems. When humans became bipedal (walked on two legs), we have developed cranial nerves that act on the intraocular eye muscles:

II optic;
III Oculomotor;
IV Trochlear;
V Trigeminal;
VI Abducens;
VII Facial.

These 6 cranial nerves innervate motor, sensory, and autonomic structures in the eyes. The oculomotor and trochlear nerves originate in the midbrain. The trigeminal, abducens and facial nerves originate in the pons.

Optic Nerve - II

The optic nerve senses light and displays the image on the retina where it is transmitted to the occipital cortex. It works with the oculomotor nerve to constrict the pupils in bright light and dilate the pupils in dark light. It is this connection between light and visual processing that inspired me to use the handheld lights described later in this article.

Oculomotor Nerve - III

This cranial nerve moves the eyes in different directions. Innervation of superior rectus rotates the eyes superiorly, innervation of medial rectus causes the eyes to adduct, innervation of inferior oblique causes the eyes to move down and outward while innervation of the levator palpebrae superioris opens the eyelids.

Trochlear Nerve - IV

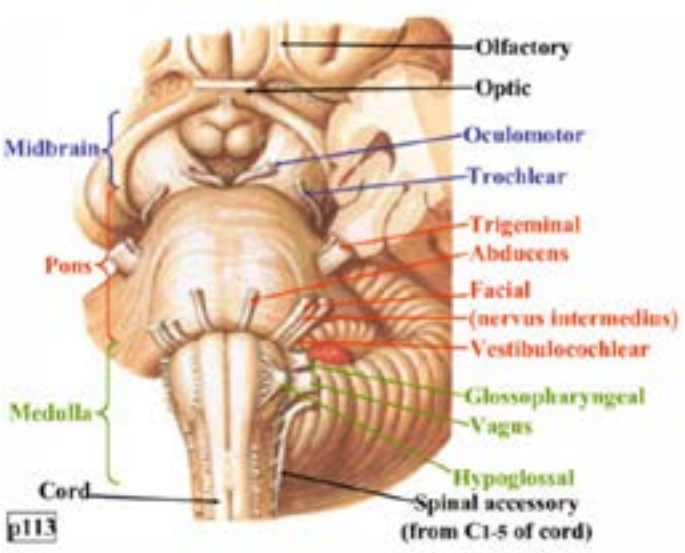


Figure 3 Cranial Nerves with their origin in the brainstem. When continuous bilateral stimulation is administered, activation of the peripheral nervous system stimulates the superior colliculus in the brainstem. The cranial nerves that cause eye movements similar to rapid eye movement (REM) are stimulated. This is associated with resolution of traumatic memories during sleep. Professor Robert Stickgold (2002) proposed that this led to development of pontine geniculate occipital brain waves as a precursor to REM sleep. Clients close their eyes and go into a relaxed state. It is often possible to see REM occur behind closed eyelids. I found, however, that many clients, especially those exposed to visual trauma such as accidents or explosions, find following a therapist's finger movement distressing and exhausting. Thus since 2006, I have used headphones and continuous bilateral stimulation (BLS) using tactile units as my preferred modality for reprocessing of traumatic memories with clients.

This nerve innervates superior oblique moving the eyes down and inwards.

Trigeminal Nerve - V

The ophthalmic branch works as the afferent part of the corneal and lacrimation reflex. This has important implications for the *Flash* or *Blink* technique postulated by clinicians such as Dr Phil Manfield in the Journal of EMDR Practice and Research in 2017. The Flash technique has gone through several iterations and a 1-day training workshops is now delivered around the world. I have varied this approach by asking clients to voluntarily activate the corneal reflex rapidly in succession when blink is said, before and after focusing on the positive orienting stimulus. This has worked to good effect and may work via a different mechanism to voluntary blinking.

Abducens Nerve - VI

This nerve innervates the lateral rectus muscle causing the eyes to abduct (move away from the midline).

Facial Nerve - VII

The facial nerve causes eye closure and blinking by the motor innervation of the orbicularis oculi muscle. Efferent output from the facial nerve supplies the motor aspects of the corneal and lacrimation reflexes.

All these cranial nerves have their origin in the brainstem. When Shapiro was walking around the lake in a circular route, I suggest that her gait triggered bilateral stimulation via the dorsal columns of the peripheral nervous system. These nerve impulses synapsed with the origins of the above cranial nerves in the brainstem. This would have triggered eye scanning movements in all necessary directions. I propose that Shapiro wrongly attributed the resolution of her thoughts and feelings to externally generated eye movements. Hence, she developed EMD and later EMDR. It was only with the administration of BLS via tactile units and auditory tones that observation was made of spontaneously generated eye movements. In my experience of using EMDR since 2002, these combined forms of continuous BLS produce more rapid resolution of traumatic memories than intermittent sets of eye movements where the clinician asks the client to follow their finger across the visual field.

It should be more widely known that Shapiro had extensive training and experience in NLP before she created EMDR. EMDR is described as an eclectic psychotherapy comprising elements of hypnotherapy, CBT, systemic and psychodynamic psychotherapies. NLP should be added to this list and come under the rubric of Reprocessing therapies as proposed by Shapiro in her forward to the book *Small Wonders* by Dr Joan Lovett (1999).

BLS can be applied in multiple ways, in multiple modalities and in various combinations. There is a

need to optimise the mechanics of the BLS.

3. **Sensorimotor:** Sensorimotor processing is the capacity for processing to occur through the body. It relies on a number of fixed action patterns or procedural behaviour patterns (e.g. startle reflex, fight-flight response, automatic reflexes) that often take precedence in traumatic situations over emotional and cognitive responses. Sensorimotor processing involves sequential movements associated with movement impulses, physical defensive responses, and arousal of the autonomic nervous system. This approach was first developed by Pat Ogden, Kekule Minton and Clare Pain (Trauma and the Body, 2006).

Neurobiology of processing at these different levels

These different levels of processing relate to different levels of the brain. Sensations and movement impulses are governed by the reptilian parts of the brain such as the brainstem. Emotional processing occurs in the midbrain and cognitive processing occurs in the upper parts of the brain or frontal cerebral cortex. These parts of the brain normally interact with one another to give us a coherent form of information processing. However, following trauma, the information processing becomes blocked at a level specific to the physical impact of the trauma. This highlights the integration of physical and psychological consequences to traumatic and stressful events.

Sensorimotor processing is the foundation or cornerstone of the other, and includes the features of a simpler, more primitive form of information processing than its more evolved counterparts. With its seat in the lower, older brain structures, sensorimotor processing relies on a relatively higher number of fixed sequences of steps in the way it does its work. Some of these are well known, e.g. the startle reflex and the fight, flight or freeze response, as well as vegetative functions. The simplest sequences are involuntary reflexes such as the knee-jerk reaction, and these are the most rigidly fixed and determined. When these reflexes occur during a trauma, the cerebral cortex will be unaware until the EMDR psychotherapist draws the clients' conscious attention to them.

More complex are the motor patterns which we learn at young ages. Once learnt, these motor patterns become automatic and enable us to perform movements, such as walking and running. In the more highly evolved emotional and cognitive realms, we find fewer fixed sequences of steps in processing, and we find more complexity and variability of response. Thus, sensorimotor processing is more directly associated with overall body processing. This includes fixed action patterns, changes in breathing and muscular tonicity, autonomic nervous system activation and so forth. These responses are associated with bottom-up reprocessing through the body.

The activities of very young children and those experiencing trauma are governed primarily by their sensorimotor and emotional systems, in other words, by bottom-up processes. A child's job is to explore their world through these systems, building the neurological networks that are the foundation for later cognitive development. Wired to be governed by somatic and emotional states, children respond spontaneously to sensorimotor and affective cues. Traumatised people frequently observe how they are controlled by sensory stimuli such as taste, smell and emotions, as they are unable to regulate these functions. For example, someone who has experienced trauma will be dominated by the startle reflex and defensive or orientating responses. Adults traumatised as children will also exhibit many of these responses.

Bottom-up and top-down processing represent two general directions of information processing: bottom-up is initiated from the sensorimotor and emotional realms and has an effect on the processing of thoughts. The lower levels of processing are more fundamental and form a foundation for higher modes of processing. They combine to set the limits within which upper levels of processing can operate. Top-down processing is initiated by the cortex and primarily involves cognition. The higher levels of the cerebral cortex monitor, regulate and often direct the lower levels in a eustress environment.

These REM, like eye movements,

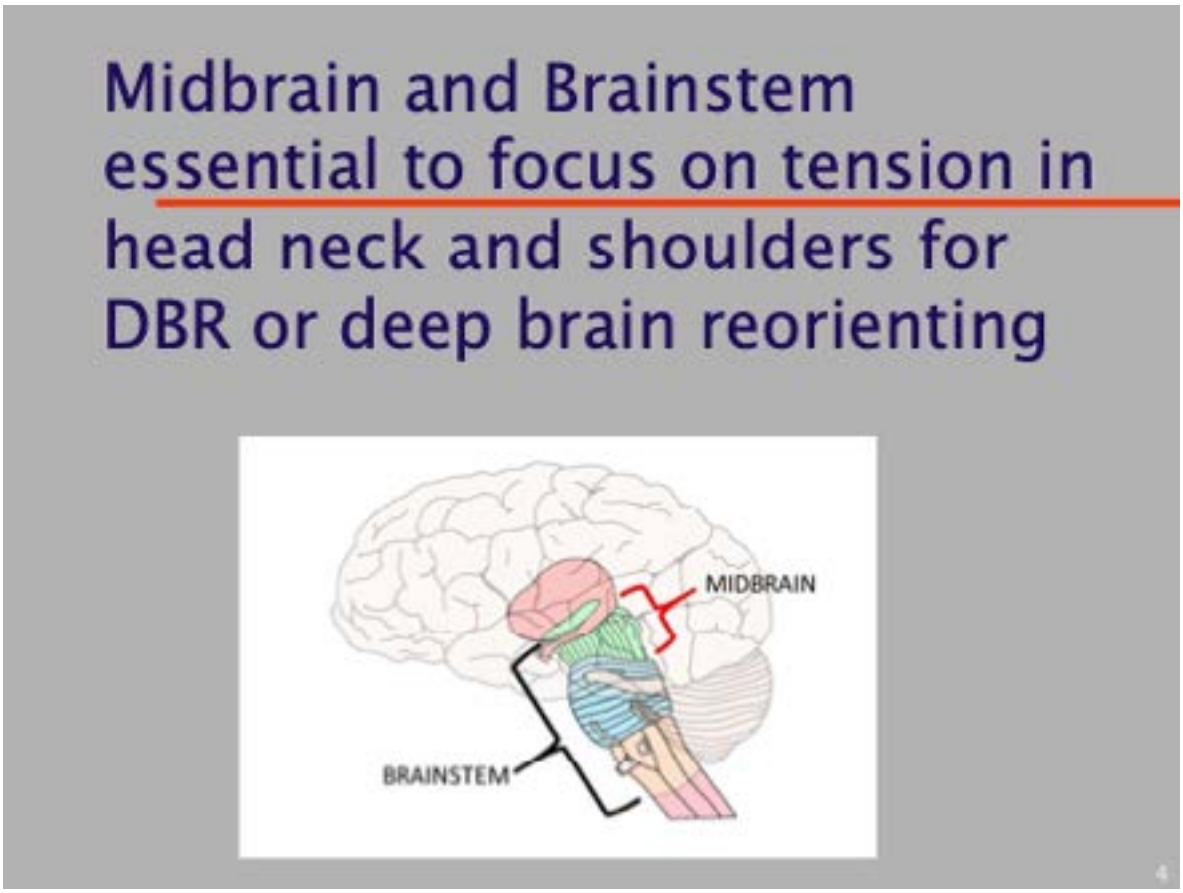


Figure 4: Illustration of how brainstem and midbrain interact with the limbic system, cerebral cortex and influence eye movements in all directions when stimulated during continuous bilateral stimulation.

are best activated by the client applying tactile units from the suitable machine, bilaterally to the area of the body experiencing the most distress. The emotions and feelings of distress are typically first processed at the level of the gastrointestinal tract as a gut sensation or instinct. The emotions sensation or feeling is then processed as a heartfelt sensation, typically palpitations, shortness of breath and feelings of anxiety. Next the client feels a tightness or lump in their throat. This is associated with the "speechless terror" of the traumatic experience. In my process I place the buzzers or tactile units and lights on either side of the throat (see the latter section of this article). This helps to soften the feeling of a lump in the clients' throat. The neural pathways and blood flow are activated at a brainstem and midbrain level. Typically, the client is able to make meaning and develop insight from the session in relation to the traumatic experience. Clients report a tingling sensation at the level of the prefrontal cortex and temporal lobe. It can be helpful to finish the session by placing the tactile units and lights on the area of the cerebral cortex most activated by the reprocessing session.

At the end of the session the machine is switched off. This gives the client 15 to 30 minutes to think about, process what has happened, and develop a level of insight. Clients typically report that they feel lighter and less burdened by their traumatic memories after the session. Even though they often leave tired, they feel refreshed – they are less burdened. It can be described as if they have had a body-mind workout. It is advised that it will take up to a week for the reprocessing to become fully embedded at a hippocampal level. Once prepared for a roller coaster of emotional responses they are better prepared for the ride.

The proposed advantage of intensive EMDR is that this process of absorption and reprocessing of the traumas will be seamless and occur more rapidly. During 4 to 5 hours of daily EMDR psychotherapy the client can be maintained in their window of tolerance and the BRAC (Basic Rest Activity Cycle) shown in *figure 5*, can be extended to incorporate the additional reprocessing time.

Rossi found that the most effective duration for a psychotherapy session was 90 to 120 minutes. He also introduced Heisenberg's uncertainty principle and Dirac's quantum notation (O'Malley 2019). Stage 1 allows for gathering information and becoming aware of sensations associated with the traumatic memory. Stage 2 allows for processing of emotions and feelings. Stage 3 is the process of illumination and follows the breakthrough of crisis and opportunity. The development of insight and intuition is possible at this stage of the session. Stage 4 allows for verification, reintegration of quantum quantities and thinking time. This quantum field of psychotherapy maps the quantum domain. At the peak of the psychotherapeutic cycle, the paradoxes of the subjective inner and objective outer worlds vanish. This allows for a synthesis of past, present, and future experi-

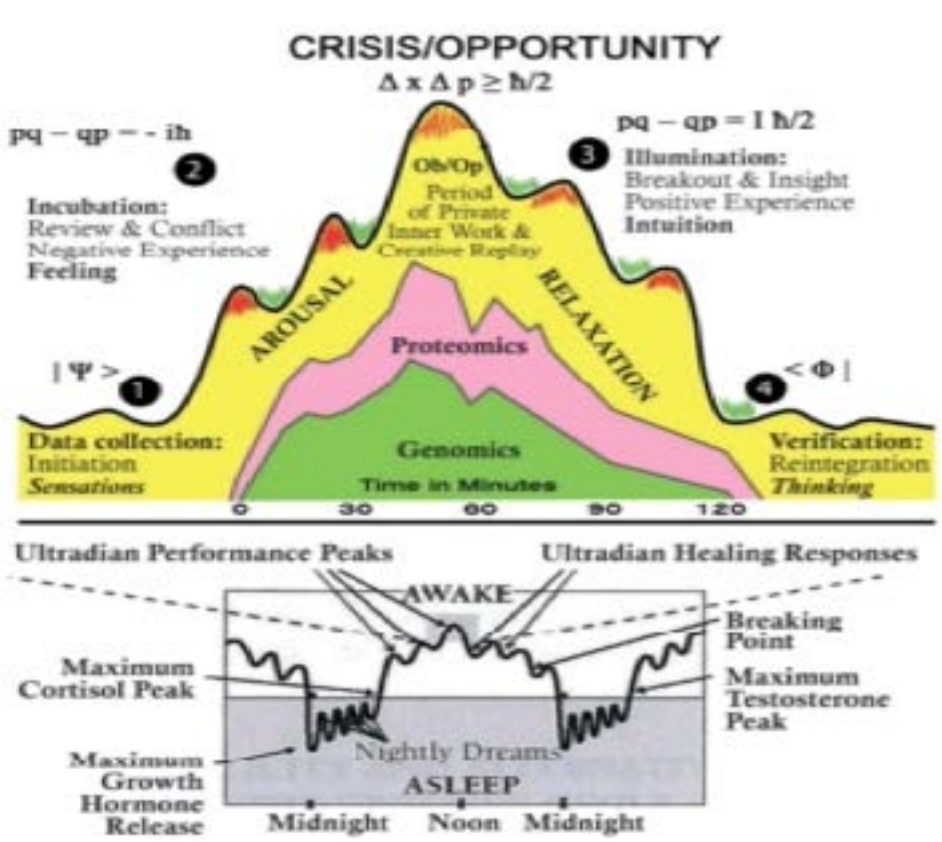


Figure 5: The area in pink represents new neural networks and adaptive brain plasticity or proteomics. This has links to the green areas which also are represented in the genomics below it. The Ultradian Rhythm was developed by Prof Ernest Rossi from the original work on the Basic Rest Activity Cycle by Nathanial Kleitman (1963).

ences in the development of a future template to deal with any imagined challenges or obstacles in the client's future. Introducing clients to the concept of Quantum entanglement frees up their thinking to incorporate past traumas and losses and broach future challenges and perceived obstacles.

The Head Brain; Heart Brain; and Gut Brain.

The head-brain can be conceived as incorporating four subunits. At the bottom you have the brainstem regulating emotional states; next up is the mid-brain, which incorporates emotional and sensory integration (the large and fine motor functions); thirdly we have the limbic system, which facilitates socio-emotional relationships and governs teamwork, taking turns and sharing; finally, we have the cortex, which encourages abstract thoughts and processes, arts, language and humour. The cerebellum, or little brain, has a unique function. Its big impact is in down-regulating the brainstem reflexes and upregulating information from the limbic system to the prefrontal cortex. The Head Brain develops and operates as a unit – the frontal lobes, limbic system, midbrain, cerebellum, and brain stem - combining together in a holistic hierarchy. The interplay between top-down and bottom-up processing hold significant implications for the treatment of trauma. In my prac-

tice, over the last 15 years, positive results have been achieved by placing the auditory output from headphones attached to an EMDR machine next to the mastoid processes bilaterally. This provides direct auditory bilateral stimulation via bone resonance and by extension direct stimulation to the cerebellum bilaterally. Clients invariably report that as the session continues the continuous BLS becomes inaudible as the cerebellum and cerebral cortex becomes acquainted to the bilateral tones and the reprocessing is accessed via the bone resonance as opposed to the auditory route. This mechanical stimulation of one dendritic spine can transfer information to adjacent ones. The hypothesis is that mechanical vibration of brain tissue, such as the cerebellum, causes beneficial development of new neural networks. This has been called, "The Buzz of Thought" (O'Malley, 2019, p26)

Latest research shows that information is first processed at a gut level by the *mesentery*. The mesenteric system is an information processing system in its own right. This registers sensations that we feel and often consciously describe as a "knot in the stomach" which can be indicators of depression. Feelings of nausea or sickness can be associated with anxiety. I ask clients to describe this feeling using a colour. I then give them a pillow with the full palace of colours in all shades displayed. I ask them to choose the colour that the imagine will best suit the process of resolving the emotional distress in their physical body.

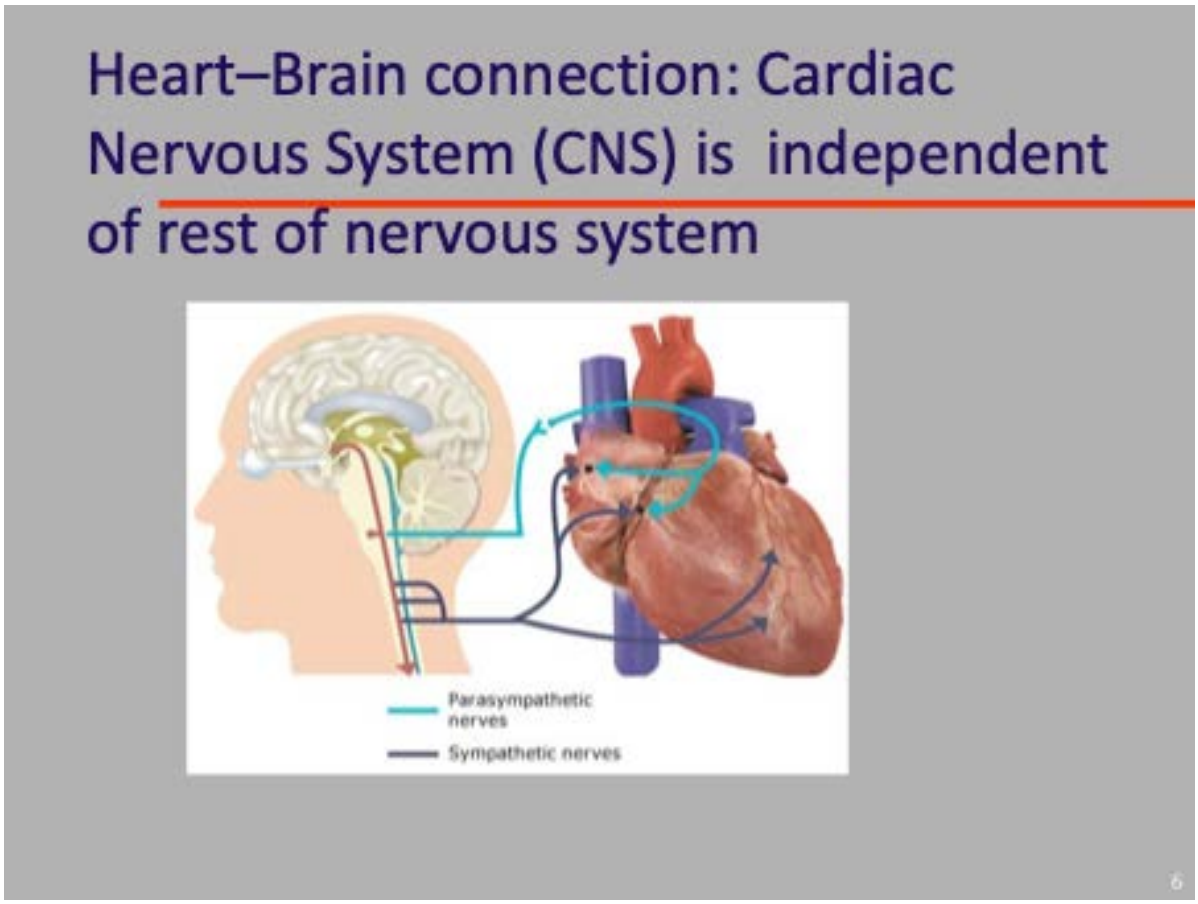


Figure 6: The heart brain has its own independent cardiac nervous system with parasympathetic and sympathetic pathways to the brainstem as shown. These have a significant role to play in the onset of unconsciously mediated anxiety and panic attacks.

I then adjust the frequency, intensity and hue of the light to match this colour palette - with the cooperation of the client. When we have matched their imagined healing colour to the emitted radiation and colour of the light, they then apply this colour in conjunction with the buzzers to the physical area of the body that is distressed. When bilateral stimulation of tactile units are held over the abdomen the client is encouraged to imagine a colour of light which will help to decrease the anxious or depressed feeling. The client is given a set of Ulanzi ilights set to luminesce with this precise colour. In my experience, this activates the reprocessing of the feelings of distress and upset associated with the traumatic memory. This light activation enhances non-verbal reprocessing which enables stages 2 and 3 of the 4-stage cycle to occur.

When the neural afferent and efferent connections from the gut brain and heart brain are activated during QEMDR then the maximal flow of information occurs. The head brain links up with these systems via the sympathetic and parasympathetic nervous systems. The dorsal motor nucleus of the tenth cranial, or vagus nerve, has its origin in the brainstem. Known as *the wanderer*, the vagus nerve synapses into the muscle wall of the GIT. The yellow arrow shows a magnified section of the GIT containing the intrinsic neurons of the gut plexi. Meissner's plexus lies in the submucosal layer between longitudinal and circular muscle layers. Auerbach's plexus is similarly located at the same level at the muscularis propria muscle layer. It is my hypothesis that these neural networks are activated by placing tactile units and lights held next to their location during QEMDR.

Often following an overwhelming trauma, the shock wave is absorbed by the body and derails the Traumatic Memory (TM) from the normal phases of reprocessing outlined above. The BLS and Ulanzi ilights provide the heavy lifting to put the TM on the right track where it can

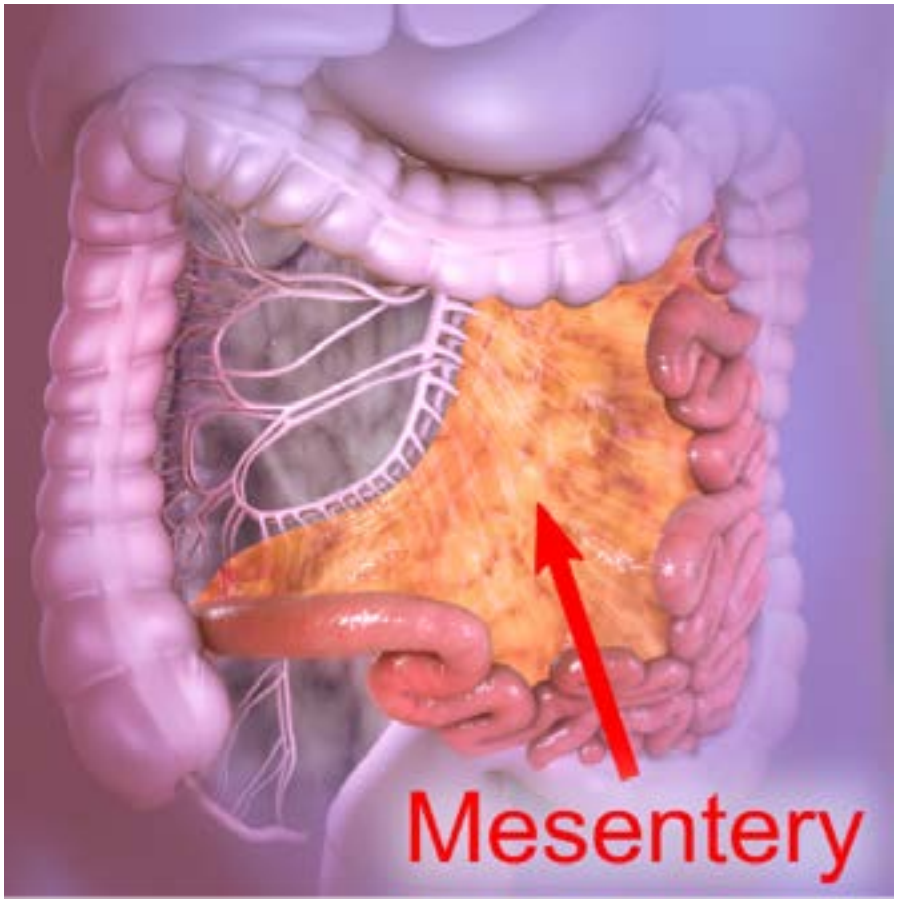


Figure 7: The human interstitium was the eightieth organ to be discovered in the body in 2018. It is continuous with all layers of the colon and the attached mesentery. The perivascular system (PVS) is also connected to the mesentery. The PVS combines the features of vascular, nervous, immune and hormonal systems. For this reason, the mesentery is an ideal focus for reprocessing of gut instincts and emotions using this new form of QUANTUM EMDR.

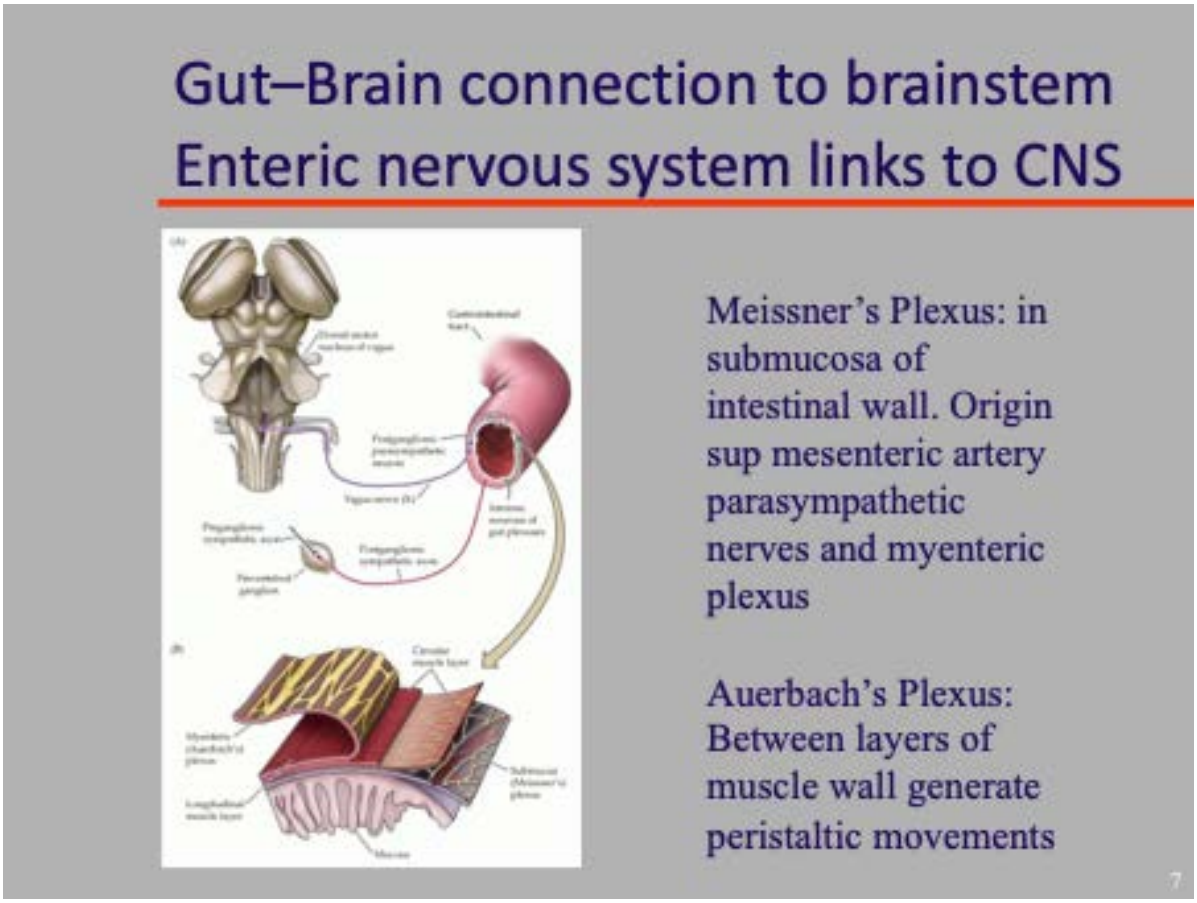


Figure 8: The connections between the gut brain and brainstem are important for resolution of panic attacks and anxiety.

Figure 9: This shows the two-way direction of communication between the gut microbiome gastrointestinal tract mesentery and central nervous system or head brain. This can be facilitated by QEMDR as the movement of body sensations emotions and feelings are tracked and reprocessed. They will typically be felt at the level of the prefrontal cortex at the end of the basic rest activity cycle.

be shunted and driven by the peripheral to the central nervous system.

In about ninety percent of clients the TM journeys first to the chest and lung area as the panic, anxiety and depressive thoughts start to decrease in intensity. Typically, at the moment of overwhelming inescapable trauma, the cerebral blood flow is directed away from the prefrontal cortex to the essential organs of the heart, lungs and gastrointestinal systems as part of an instinctive survival response. The emotions related to the trauma become blocked and the client feels as if they have a "lump in their throat" and are unable to speak. This stage of trauma is known as "speechless terror". When clients are asked to describe what the sensation and feeling is, invariable they describe a red inflamed swollen lump as if they had swollen lymph glands or tonsillitis and a sore throat. They are invited to choose a colour with the frequency and vibration which will dissolve the inflammation and swelling. The ilight can then be adjusted to radiate this specific intensity and hue of colour by a simple switch.

Professor Ed Bullmore in his book, *The Inflamed Mind*, and Dr Valeria Mondelli (neuroimmunologist from the King's College London), untreated stress and trauma directly activate the immune system triggering an auto immune re-

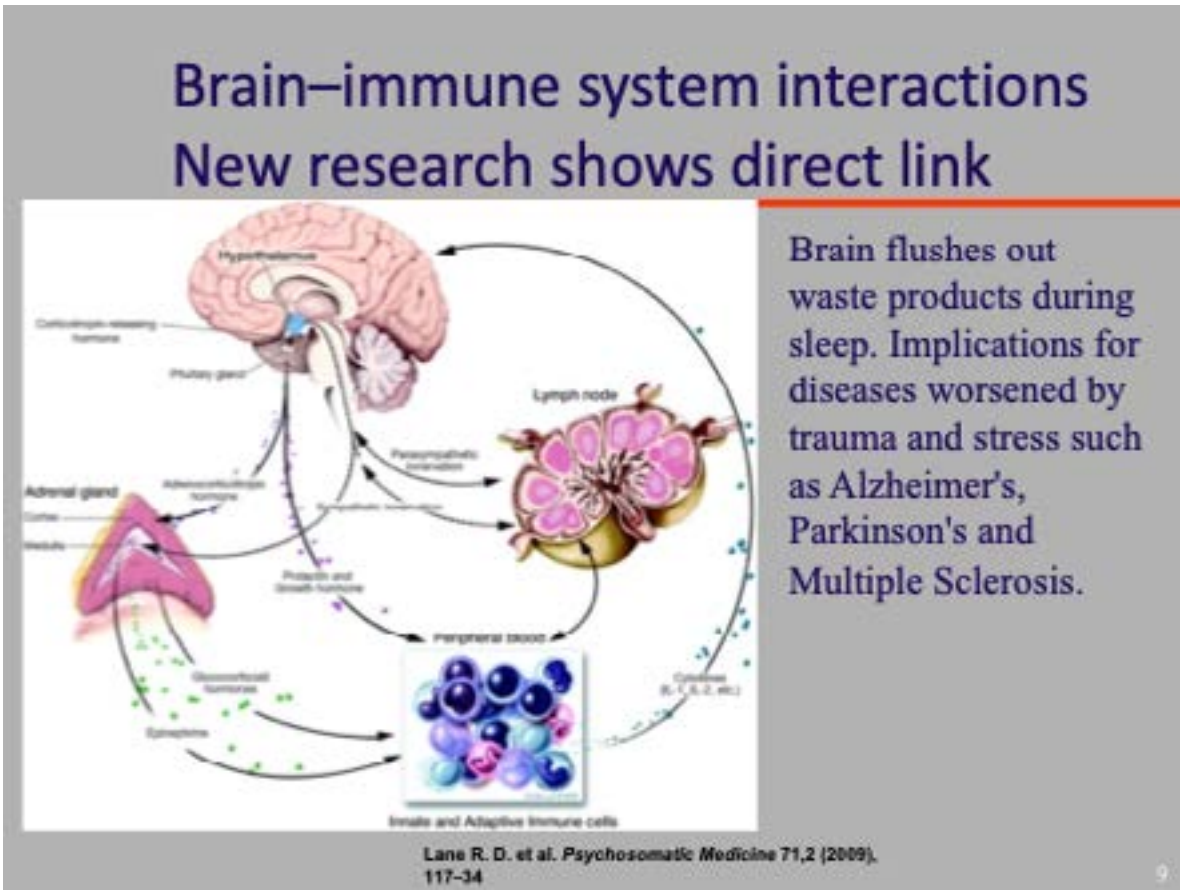


Figure 10: This shows the relationship between stressful experiences and activation of the immune system. Explanation of this cycle of interaction is an important part of psychoeducation prior to QEMDR. As shown by Francine Shapiro in her battle against cancer she was able to visualise activation of the immune system to destroy blood cancer cells.

sponse in our traumatised clients. The characteristics of an inflammatory response are redness (rubor), heat (calor), swelling (tumour), and pain (dolor). It is now accepted that traumatic stress releases copious amounts of hormones such as adrenaline, noradrenaline, cortisol, glucagon and growth hormone. These have evolved to protect us when threat is present and activate our survival instincts.

In many of the victims and survivors of "The Troubles" that raged in Northern Ireland from the late 1960s to the late 1990s, the threat is perceived as omni present. Thus 25 years after the Good Friday Agreement many victims are still in a state of hypervigilance and perceived threat. This means that, in these clients, the fight-flight-freeze response is permanently switched on. The stress system is in overdrive, causing an overexposure to cortisol and other stress hormones resulting in:

- Depression
- Anxiety
- Digestive disorders
- Headaches
- Fibromyalgia
- Pain and muscle tension
- Cardiovascular Heart Disease, Myocardial infarction, Hypertension and Stroke
- Sleep disturbance, nightmares and flashbacks
- Obesity
- Diabetes
- Impairment of memory and concentration

The crux of the problem in trauma stems from an inability to process sensorimotor and emotional responses, and the disconnection of the frontal lobes for effective cognitive and higher-level affective reprocessing. Sequencing of responses is a necessary prerequisite for information processing. When someone experiences a traumatic event, the sensorimotor systems become activated and often becomes overwhelmed in response to threat. When these functions are overwhelmed, sensorimotor processing stops and further affective processing at the cortex level is blocked, not only in the moment of the trauma, but also in the future. Thus, the interplay between top-down and bottom-up processing can hold these traumatic reactions in place. My unique approach is to integrate emotional and sensory processing with brain stem integration and information. Since 2019, aspects of the Quantum Field of Psychotherapy and the Deep Brain Reorienting approach developed by Dr Frank Corrigan, Consultant Psychiatrist from Scotland, has led to the development of QEMDR in 2022.

Part 2

Principles, Process and a Case Study

Some Principles of Quantum EMDR

Discovering the origin of ideas is important. Remy Roth PhD is based in Switzerland, and he has been publishing on the principles of Quantum Physical medicine since 1997. This expanding literature on the applica-

tion of Quantum physics to the field of psychotherapy will help all psychotherapists appreciate the introduction of the spirit or God particle into the therapeutic consultation and activating it at the zero-point field and quantum level. The following describes the overlap of the quantum field with EMDR psychotherapy.

1. A quantum framework can describe human behaviour
2. A clearer understanding of these neurally entangled processes can elucidate to waht extent quantum physics is involved in the emergence of cognition, feelings, sensations, emotions and movement from neural activity.
3. As more experimental evidence supports the hypotheses of quantum enhanced neural processing then
4. We gain knowledge toward thinking and knowing about how we think.

Quantum Physical Medicine (Remy Roth 1997)

- Introduces concept of antineutrino (matter and antimatter)
- Spirit or God particle can be detected
- Changes in consciousness from the inside out
- Starting with the cognition of the Belly-Brain or Gut Brain (Michael Gherson)
- Linking to the Head brain of the Brainstem and Central Nervous System
- Spreading to central coherence of electromagnetic field of the heart brain (5000 times more powerful than Brainwaves)

Nature of Traumatic Memories

When traumatic memories occur, they are imprinted into the limbic system with associated distorted sensory information. They remain stored at this level and the thalamus is unable to relay information to the cortex. Careful sensorimotor psychotherapy integration at the quantum medical level enables the process of thalamo-cortical binding to occur so that the information

Neural Network for Consciousness

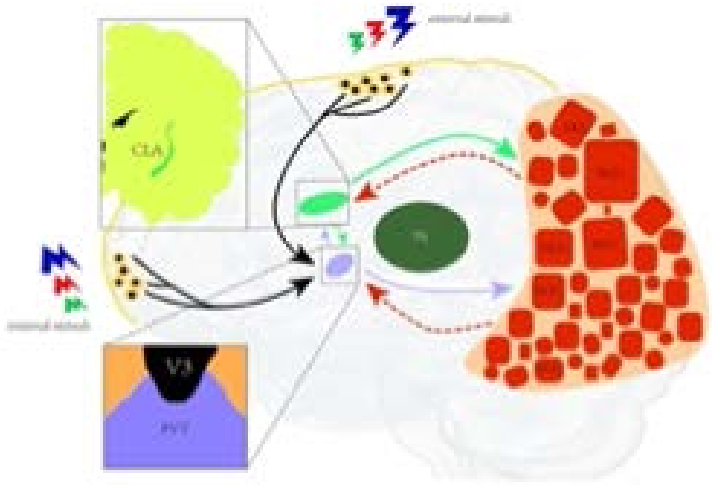


Illustration of the neural network of consciousness. The paraventricular nucleus is in control of arousal (closely related to the maintenance of consciousness) and the neurons in the posterior cerebral cortex. It is related to the integration of feelings and the generation of consciousness content. The claustrum is the key channel of the consciousness loop and the transmission of control information. CLA, claustrum; PVT, paraventricular; Th, thalamus; NCC, neural correlates of consciousness; V3, third ventricular.

Figure 11 The Proposed role of the Claustrum in the generation of consciousness

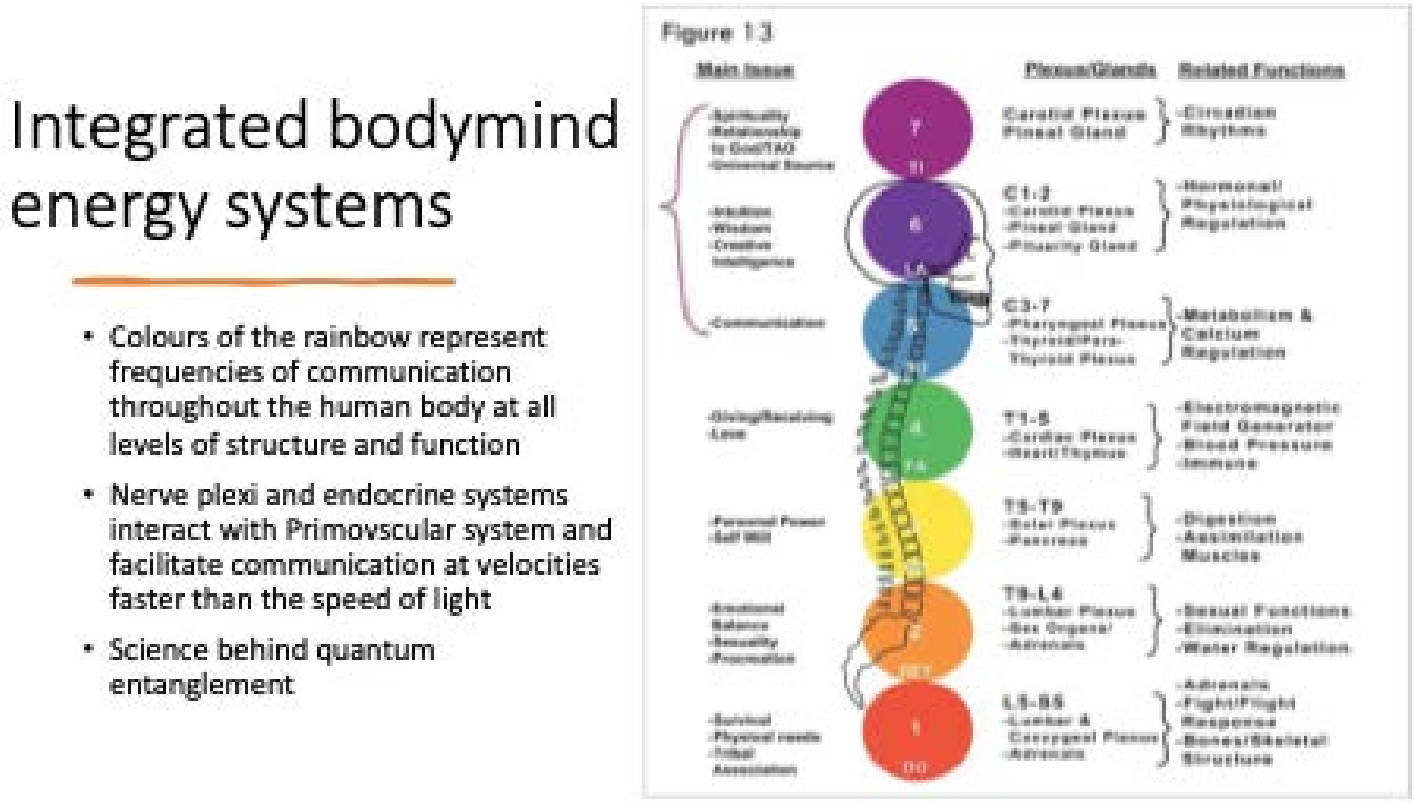


Figure 12 How the colours of light reflect processing at different energetic and endocrine and neurological levels

transfers firstly to the right cerebral hemisphere and then to the left cerebral hemisphere. Here it is associated with language and meaning. The patient can now make sense of the traumatic experience. In QEMDR psychotherapy the medial, lateral and orbital areas of the prefrontal cortex are crucial to engage as there is a danger that during the trauma, they will be offline and unable to process information. The clients notice a new tingling sensation in the cortex. One hypothesis is that this reflects the development of new neural networks. A combination of placement of the tactile units and or the handheld lights over the area of the cortex with changed sensation is used during QEMDR. Memory reprocessing and reconsolidation at stage 3 and 4 of 4-stage Creative Cycle can occur during QEMDR.

The response to trauma is that an alarm bell is set off within the brain. This, in turn, abnormally alters brain wiring. There are different responses to threat depending on the type of reaction. In hyperarousal there is a classic flight response at the level of the locus coeruleus where noradrenalin is released to increasing focus and affect the activation of the HPA Axis which in turn activates the production of adrenalin which increases heart rate. Typically, this occurs in older adolescents, especially males, and is linked to precipitation of aggressive instincts when the person's survival is threatened.

On the other hand, the dissociative response to threat involves freezing or numbing – the parasympathetic system is activated, causing the heart

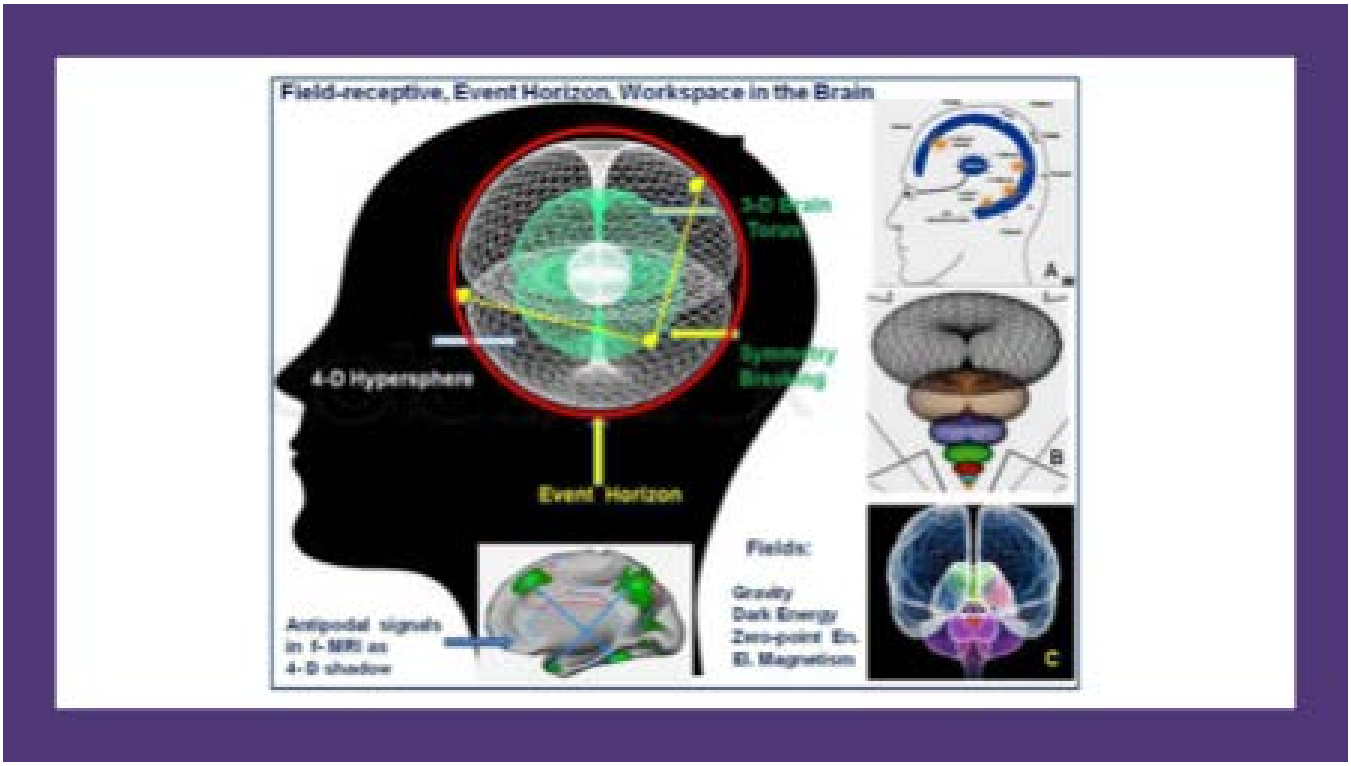


Figure 13: Field receptive, event horizon model of consciousness, depicted in various representations: Main picture: postulated double-toroidal field integrating the 4D-hypersphere workspace with the event horizon surface, projecting the integral individual information as an internal model of the self. Note that the 4-D hypersphere is pictured within the skull, but that it can exhibit an extended localization, surrounding the brain or even the whole organism, due to fractal properties and can also be positioned at a micro-scale at or within the brain cells or extracellular space. Embedding of the 3-D toroidal domain of the brain within a 4-D hypersphere is therefore multidimensional and fractal at various levels of organization. Symmetry breaking occurs from the 4-D hypersphere to the 3-D internal brain torus, of which the traces can be detected by series of f-MRI scans of the brain as antipodal activity domains in the brain tissue (inset middle below). Insets at the right A: Supposed broadcasting centres in brain that may explain binding and global synchrony, according to Baars B: Fractal organization of information scales in the extended brain. C: Hemi-spherical anatomy of the brain resembling a toroidal geometry.

rate to decrease and the person to feel shut down or disconnected. It tends to be the response of younger children, often adolescent females, and is a result of painful inescapable trauma.

Effect of traumatic and stressful experiences on attachment

With trauma comes disorganised attachment. This is where the young person has contradictory behaviours at the same time. Movements are incomplete, mistimed and include freezing and moving slowly as if under water. They may behave fearfully towards their parents, with hunched shoulders and frightened facial expressions, and are often unable to regulate their emotions. The attachment relationship can be disrupted by exposure to trauma when attachment patterns are laid down. Through QEMDR psychotherapy, patients become more aware of their emotions., and develop an awareness of any attachment difficulties with their parents, carers, siblings or peers.

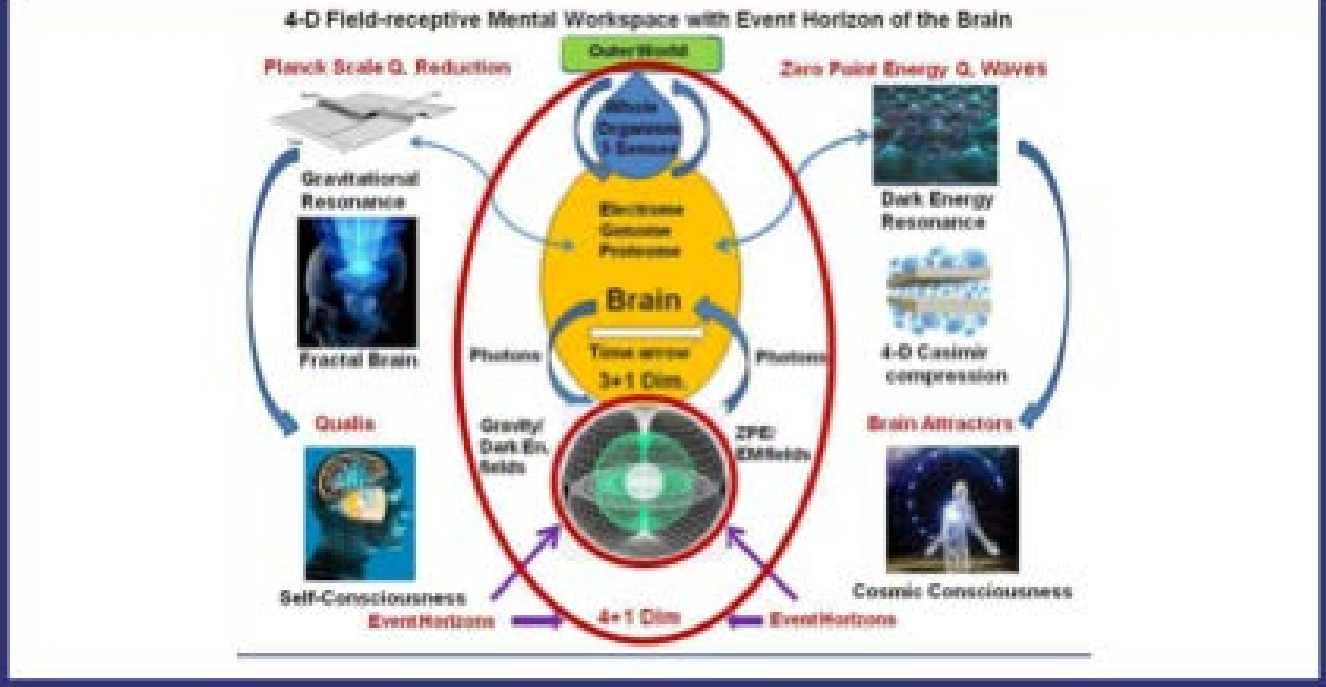


Figure 14: Modelling of brain/mind relation in a 4+1-dimensional space-time framework (4+1 implies 4 spatial dimensions and one single dimension of time), on the basis of energy trajectories in a nested toroidal geometry. The opposing forces of Dark energy (diverging force) and Gravity (converging force) as well as discrete wave frequencies of electromagnetic fields, are instrumental in the generation and compression of individual life information. The human brain may receive quantum wave information directly derived from the Planck space-time level (left above) through quantum gravity mediated wave reduction, as well as through resonance with the ZPE field (right above). Our brain can perceive only 3+1 dimensions with a one-directional arrow of time. The material brain and its 4+1-D supervening field-receptive mental workspace should be seen as an integral whole, until bodily death of the organism. The 4th spatial dimension allows individual self-consciousness since an extra degree of freedom is required for self-observation and reflection, while in the mental context the time dimension is symmetrical, allowing to integrate past and future-anticipating events. The 4th spatial dimension is also assumed to accommodate the bidirectional flow of information between the domains of self-consciousness and universal consciousness. Bottom-up information flow from the Planck scale, combined with top-down information conjugation from the ZPE field, constitute the event horizon of the brain, also integrating gravitational and dark energy related force fields, and supervenes the physical brain. Event horizons of brain and whole body are depicted in red ellipse and circle respectively.

Case Example Anna - Act Two, Scene one

Anna Described how she discovered the narcissistic abuse of her stepdad by her mother. When she told me about this it was very raw. Four months later she was ready to deal with the implications of what she had discovered.

She had done a lot of work on herself since we had met previously five years ago (Act one in 5 parts is a book under development). It was evident that what she had seen had brought up the hidden trauma that she was not previously aware of when we completed the 5 sessions of therapeutic work previously.

Anna realised that her parents had always put their financial situation ahead of their care for her as a child. When recently her father asked her to pay for a meal and pay for the

other guests at the table, she felt despair in the pit of her stomach. It was a reminder of how she had been neglected as a child.

Her mother had abused her stepfather emotionally, mentally, financially and physically. She had been charged by the police and was now on police bail. A court case was forthcoming with Anna due to give evidence against her mother in relation to the abuse of her stepdad.

Quantum EMDR

I started by installing the nurturing images of her husband Matt and dog Mia. This was combined with a picture of the Hail Mary Mother of God and Mother Earth. We also included the mythological and spiritual traditions of God and Archangel Michael as protectors keeping her safe. We focused on the early childhood memories of Anna feeling like she was an animal trapped in a cage unable to escape. This was experienced as the yellow feeling of fear in the pit of her stomach. As Anna's inner adult self-went back to the time of her three-year-old self, she was able to listen to what the three-year-old needed to say. For the first time, this three-year-old could be seen and heard. As Anna led her forward the three-year-old started to skip and run. However, she was wary and kept looking back to see if her mother was there to hurt her. At this moment the adult Anna was behind her three-year-old self who became confident enough to stamp her feet and was allowed to do what she wanted to do for the first time in her childhood.

Anna now described how her biological parents had neither faces nor emotions and were no longer a threat. However, Anna was able to describe how she could not let her mother go and how she would fawn all over her in the here and now. Anna said how she now realised that the memories of being hit as a child by my mother were suppressed. This explained why these memories were not activated 5 years earlier.

When Anna went to the foundation class run by the nuns. She was glad to escape from the three-storey house and she remembered loving school. Anna showed me a video of the narcissistic abuse and destructive behaviour exhibited by her mother aged 82. She said how when her mother was aged 42, this abusive behaviour was 100% worse.

Target memory

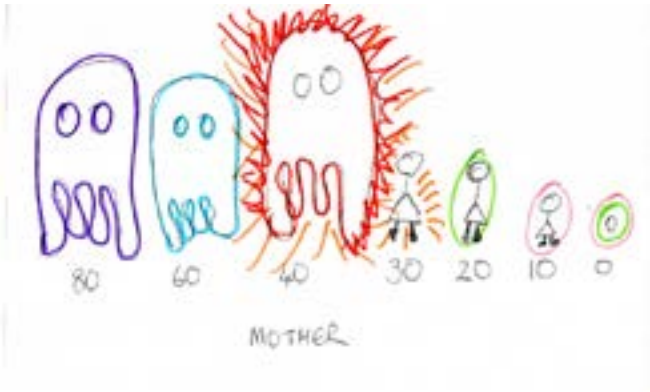
Anna started to stand up for herself against her mother from the age of nine. She was now determined that she had a life to lead and that she wouldn't be hurt by her mother anymore. The quantum aspect of this target memory is that we were going to go back in time to when Anna was 9 and rewrite and upload the years of her life from 9 to the mid-twenties when her actual life matched her desires and expectations. As with a final cut of the movie of Anna's life, we were going to leave the actual events from age 9 to 22 on the cutting room floor of the editing suite.

Quantum reprocessing

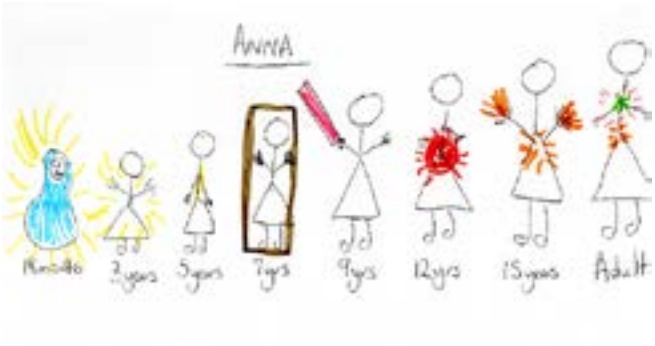
Anna saw herself as a nine-year-old with different coloured light sabres and she was able to say to her mother: 'You're not good for me. I'm not scared of you anymore. You have no control over me now." Anna realised that from aged 5 to age 9 she was more concerned about the safety of her mother than she was about her own safety. From this I concluded that as a nine-year-old, Anna had the responsibility of a parent and was in fact a parentified child or a victim of "the Atlas syndrome".

Reintegration the fragmented child parts

- at five, I was emotionally wounded and lived in the tempestuous environment
- at seven, I was sexually abused by my Italian grandfather
- at nine, I realised that the behaviour of my mother towards her wasn't right.
- at 12, Anna said to herself I'm not taking this any more
- at 15, Anna stood up to her Italian grandfather. He made another attempt to sexually assault her, which enraged her to the point that she threated to "throw him off the balcony" if he ever came near her again.
- Anna drew pictures of herself at these different ages using colours to demonstrate the difficult feelings she experienced.



Anna also drew pictures representing her mother from her current age going backwards towards her early childhood. This allowed Anna to show compassion and healing for her mother's past transgressions.



Scene Two

Anna realised that from the age of nine she wanted to be sent away to drama school as a boarder so that she could escape from a neglectful and traumatic home environment.

Quantum EMDR.

I explained to Anna that in the quantum field anything is possible. Before we replayed Anna's life from age 9, we had to deal with the guilt that Anna felt as a nine-year-old leaving her mother to go to drama school. As the parentified child, Anna did not want to upset her mother. Anna described how at that stage her mother was like an octo-

pus whose tentacles were clinging on to Anna's body unwilling to let her go to boarding school. Anna was able to choose the red handheld light which I shone from my computer screen towards hers. Anna dimmed the lights in her room so that the red glow of the light could be experienced more powerfully. During the quantum EMDR session, Anna continually performed bilateral stimulation using the butterfly hug. I was able to integrate her mind-body heart and soul by connecting this chakra energies and colours culminating with the white light which represented the protection she was receiving from God and Archangel Michael. She was also able to resolve the anger and abuse experienced by her mother by diffusing the red fiery light from her mother's root chakra.

Scene three

Anna described how she felt she was being pulled back in the chair as if her mother's hands were placed on her shoulders from behind, pulling her down. With the use of the blue light shining from my desk to my laptop and towards Anna's computer via the Zoom connection, Anna continued the self-administration of bilateral stimulation via the butterfly hug. Eventually Anna told me that she felt disconnected from the tentacles of the octopus which represented her mother's enmeshment. Anna described to me how it was as if, with the help of God, Matt and Archangel Michael, her childhood soul had landed in her body. This left Anna feeling whole and complete again and that this was both an exciting and comforting feeling. Anna told me that she had put her mother in her own energetic field and that her tentacles were unable to reach the new dimension and new vibrational energy that Anna was able to emit. Anna was able to realise that now if her mother was to lash out at her she would be too far away to hurt her.

Scene four

Suddenly Anna realised that she was 18 months old. She described to me how it was difficult to breathe. We cocreated a safe space in the ocean where Anna was swimming close to the surface and her mother who was represented by the octopus was on the coral reef and close to the ocean floor. There was a glass ceiling separating Anna from her mother and Anna was able to swim safe from the fear of her mother's abuse.

Use of quantum the EMDR to remake the years of Anna's childhood from 9 to 22

Age five: I was able to feel safe in the ocean so that she was no longer angry when she heard the aggression and fighting between her parents.

Aged six: Anna was able to feel the blue light cascading down as she swam freely in the ocean.

Age seven: there was a residual amount of negative energy associated with the sexual abuse from her

grandfather. This was at a very low SUDS rating.

Age 8: Anna told me that her mother was now confused that she was unable to reach her and could no longer be cruel to her.

Age nine: Anna was able to send her mother and grandfather in opposite directions in the ocean floor. They were now both well out of harm's way.

Scene five

Anna talked about her mother's upbringing. She was born in 1941 in the south of Italy. She was able to appreciate how her mother was exposed to the collective and ancestral trauma associated with World War II. We were able to hypothesise that exposure to this war-torn environment may have manifested at a transgenerational level in the here and now. Suddenly Anna had a tingling sensation all over her body. She described how it was as if limpets and animals with suckers were clamping on to all parts of her body. It seemed as if they were coming to attack her. It almost felt like an alien invasion or encounter of the third kind. During the quantum EMDR session, Anna still wanted to know if her mother was okay. This shows how in her adult self the parentified child was still present. Anna was able to visualise the green blue ocean colours along with the purple light surrounding her mother. To reinforce this image, I shone the purple light at 100% intensity across the zoom connection from my brightened room to her dimmed one. She placed her in a shell with jewels and mermaids around her. This was all done with the assistance of God, Archangel Michael and visualisation of the white healing light coming from my handheld unit.

It was as if Anna felt that her soul was being rescued for the second time. What we realised was that aged 18 months, an infant soul had merged with that of her mother. It was normal now as she finally disconnected from her mother's enmeshment. Now her infant soul was free to become fully integrated in her adult mind body soul and spirit.

Scene six

It was now time for drama school. The parents and leaders of the school where Judi Dench and Ian McKellen. The timetable was drama in the morning, followed by dancing and singing. This gave Anna freedom, hope and optimism and she was learning all the time.

The producers arranged for her first audition. This was a commercial for "Ready Brek" and she felt a warm glow as she completed her performance. There were film opportunities and Anna performed Annie on the London stage. Although she did not have the lead role, she was happy to be involved in the production. She described how she arrived with her hair in rollers, got into costume and was excited yet nervous. We reprocessed this using quantum EMDR. Soon the butterflies in her stomach flew away and she put on the perfect performance.

Using the quantum REMAKE technique, (This stands for the Replay of Emotional Memory using Action, Knowledge for a good Ending), Anna reimagined the following:

12 - at drama school

13 - in Raiders of the Lost Ark with Harrison Ford

14 - travelling to location for nine months with the tutor seeing the world

15 - got the opportunity to play in Coronation Street

18 - completed my A-levels

19 - stayed on in Coronation Street and completed my MSc in drama

20 - moved into an apartment in Manchester overlooking the docks

21 - moved to Lymm in Cheshire

22 - continued to work on Coronation Street

23 - offered a film part playing alongside Judi Dench

From here, Anna was able to merge with her actual life which involved giving birth to Josh aged 29 and Lara when she was 31. She described how her life was fulfilled, creative and every inch of her body felt alive.

Quantum EMDR body scan.

Anna described how she felt that she was still being restricted as if she was enslaved by chains around her neck which were holding her back. As she used the bilateral stimulation, Anna realised that the chains were holding her back from around her neck. She tapped on all parts of her body to free the chains of attachment and enmeshment. Suddenly she was free. Anna could hardly believe it. She asked herself, "Is this a trap? Can I go?"

Suddenly Anna was flying from where she had been held back and with the help of God, Matt and Archangel Michael, she was able to land back home safely and gently fully integrated in mind, body, soul, and spirit. At this stage Anna laid down on the bed and continually performed bilateral stimulation releasing the fear that was felt in her tummy and in her arms. She felt as if she was immersed in a brown colour. As she got up, she was able to say that she was free, felt hope and was less fearful. She knew in her heart and soul that she was now on the right path.

Future of psychotherapy for Traumatic Stress

Trauma means that you are unable to control your response to stress. You are also less able to interpret the body's signals in order to guide action, and this altered psychological sense mechanism may impair your sense of self and personal identity. In the future, trauma-focused therapy should involve a holistic approach to healing traumatic memories from the point at which the emotions associated with them have become blocked. This can be at the level of the gut-

brain, heart-brain or head-brain. The endpoint of coming to terms with the traumatic memories is being able to integrate them into long term memory at the level of the hippocampus. The client will have a new awareness of the effects of trauma – on their body, emotions, sensations, and thoughts. The traumatic memory will have become a 'normal' memory which is safely filed in episodic memory without activating the previously highly charged emotions, sensations and feelings. Thus, the client knows these events happened but no longer feel the associated emotions, sensations or feelings. Through the process of QEMDR the traumatic memory is no longer burned into the limbic system as before.

The client is left feeling as if the burden and weight of the trauma has lifted from their shoulders, making them feel lighter and more able to move on with their lives. Future work can focus on the development of post traumatic growth, mental toughness and resilience.

When the multiple events scale is administered at the end of QEMDR Psychotherapy, the scores typically reduce from a peak of 60 to 80 to a normal score of less than 30. When there are symptoms of dissociative disorder the Shut D questionnaire is administered. A score >20 out of a maximum of 39 is suggestive of a significant dissociative component to the presentation. Most clients respond to the above therapeutic approach and at the end of therapy the Shut D scores reverts to normal. The patient is now maintained within their window of tolerance and not as easily triggered into re-experiencing their traumatic memories. Instead of living in the past they are mindful in the present and able to look forward to a future. By integrating and exploring the new science of quantum entanglement and the existence of cosmic or unity consciousness, trauma therapy can take a giant leap forward and healing can occur at the quantum level.

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