

The Psychosomatic Matrix

An underlying theme throughout this book has been the supposed body/mind split. To bring these two systems together, Mahler's concept of a "dual/unity" can be re-modelled in triplicate by our understanding of ice, steam, and water. Seemingly different, we know that on a molecular level ice, steam and water are three forms of the *same* thing, H₂O. Depending on its energetic state, they are different manifestations, but underlying all three is the unchanging, unified source of the molecular arrangement. While not as common as it should be, within different disciplines of psychotherapy, this unified state of the seemingly differentiated forms of psyche, (steam) soma, (ice) and emotions (water) are represented in various terms such as embodiment, embodied cognition, somato-emotional and somato-psychic. The psychoanalyst Loewald describes this undifferentiated state as a "primal density" (Mitchell, 2000, p. 39). Until recently, social, self and cognitive psychology had traditionally focused only on the psychic realm. Now it is becoming more common to use more body-oriented terminology: "embodied cognition" (Schubert & Koole, 2009) and "somatic self-consciousness" (Pegis, 2009, p.268), while in psychiatry, it has been called "recorporation of cognition" (Fuchs & Schlimme, 2009, p. 570). The psychoanalyst Fonagy highlights this emerging trend: "The focus has shifted from what are in effect disembodied abstractions to embodied cognition in which the meanings of things in the environment are formed from experiences of acting on them." (Fonagy, 2007, p. 423.)

Heller (2021) recently reviewed the source of the mistaken belief in a separate body/mind as typically attributed to Descartes. According to Heller, Descartes was misinterpreted by "mainly English speaking intellectuals" (Heller, 2021, p. 176) who claim that he "inaugurated dualism" (Heller, 2021, p. 174). He argued that Descartes fought against dualism and promoted a delineated interactionist and organismic approach to embodiment. He comments insightfully that widely used terms such as body-mind and Body Psychotherapy, as used throughout this book for example, are unwitting endorsements of the dualism concept. Referring to the research of Payne and Brooks (2019) he wrote: "Although today's medical research tends to find dualism undefendable, health institutions have not yet managed to avoid dualistic terms such as body-mind techniques or body-psychotherapy, to describe what is often called the 'body-mind connection' " (Heller, 2021, p. 175). With Heller's position, we have now come back full circle to Reich's original concept cited earlier: "...the fact [is] that muscular and character attitudes serve the same function in the psychic

apparatus; they influence and replace each other. Basically they cannot be separated; in their function they are identical.” (Reich, 1967, p. 241)

While agreeing with Heller’s position, this book takes a divergent view of this theme. With a bottom-up model of development and treatment, I argue that as sympathetic as Heller’s position is to the idea of a unified body/mind, he is approaching the issue from the wrong direction: top-down. The questions to be asked are not: “Are the body and mind separate?” or “When and how did they become separate?” or “How are we to reunite them?” but rather to focus on the body-based, unified, subjective self-state before they became separate, yet interacting, functional modalities: differentiated but indivisible. We find surprising support for this position from the artificial intelligence theorist Anderson, who, inadvertently echoing Reich, argued that:

Against the Cartesian claim that we are radically different from animals, EC [Embodied Cognition] maintains our evolutionary continuity. We, like animals, are essentially embodied agents and our powers of advanced cognition vitally depend on a substrate of abilities for moving around in and coping with the world which we inherited from our evolutionary forbearers. Against the cognitivist claim that cognition is the rule-based manipulation of abstract representations, Embodied Cognition maintains that there is more to cognition than mental representations. The explicit representations cognition does employ are generally limited, physically grounded and oriented toward the specific needs of a given agent. (Anderson, 2003, p.126)

I believe that this is why connective tissue is so important: its primal origins, its structure and functioning are what bind body and mind physically and energetically, somatically and psychically. To support a unified body/mind state I have utilised a connective tissue, matrix based, bottom-up model rather than a top-down, central nervous system based, cognitive, understanding of evolution, development and behaviour. I have used connective tissue in its myriad forms — from liquid to various solid states on to crystals — as the medium, the means whereby, a unified state of body/mind is forged and maintained.

The twin themes of this book are that through research on CT, clinical observations and lighter touch, the manual therapies are moving inevitably towards the traditional arenas inhabited by dance, movement and body-oriented psychotherapies: self-experience, self-states, emotions and individualised, interpretive sensations etc. At the same time, the psychologically oriented therapies, rather than over-focusing on the CNS and cognition, should engage with CT to reach a deeper understanding of psychic functioning leading to an interdisciplinary sharing of experience and knowledge. Likewise the manual therapies could benefit from the years of experience and knowledge of psychologically-oriented body therapies in the relationship between body and mind.

What supports this interchange is the fact that CT, which had been relegated to the anatomical “dust bin” for so many years, is now being acknowledged for its universality in all life functions. All body and mind activities happen within some form of CT. As an example, for both the manual- and the psychological-oriented therapies, the importance of the shape and movement qualities of the physical body predominate. CT creates the shape the body takes. It is not just a matter of genetics. As pointed out, stress on a tissue’s cells can affect their genetic programming (Ingber, 1998). In addition, environmental conditions and life experiences influence the body’s shaping. And most important of all is that structure is behaviour even within the non-living as hysteresis showed. When we look at the patient’s photos in the Appendix the shape/behaviour dynamic becomes obvious. This patient entered therapy with a formless body and a formless life. There are no contours to the body — no clear head, neck, shoulder delineation for example. These different segments appear as one unit. Overall there is simply a uniform oval form to the body with no clear sense of a young adult in early manhood. His psychic realm reflected the same qualities: living with his parents, working in their business, no interest in the business, no relationship and too much smoking and drinking. The second set of photos show a definition in the body, a sense of emerging manhood with clear delineation among the different bodily segments, yet at the same time an integrated, connected flow throughout the body. (This again is the unique ability of connective tissue to simultaneously separate — create different segments — and connect — unify the bodily segments into a coordinated whole.) At the time of the second set of photos he had moved out of his parents’ house, reduced his recreational intake, entered into a stable relationship with a woman and begun further training for his profession. We see and understand the same clarity, maturation and organisation happening in both soma and psyche simultaneously. We also see the connection/separation theme emerge: more independent, more individualised. This is not a coincidence or an analogy. Body and mind influence each other directly in both health and disease. In Functional Analysis we take Reich’s understanding as our basis: at the deepest level body and mind do not need to be brought together. They are functionally at one with each other. In a different context, the psychoanalyst Loewald describes another dual/unity phenomena that reveals the connection/separation theme.

Mother and baby do not get together and develop a relationship, but the baby is born, becomes detached from the mother and thus a relatedness between the two parts that originally were one becomes possible.” (Loewald, 1986, p. 22)

Despite the typical overemphasis on neurological functioning, neural impulse transmission is dependent on CT. For example the synaptic gap that nerve impulses must pass through for transmission to be continuous is filled with a form of the ECM. As mentioned, these very impulses do not arise endogenously within neurons or their dendrites. Impulses and sensations are created within the ubiquitous CT states and fed into the neural pathways for transmission via different types of receptors embedded within the various forms of connective tissue. Furthermore, the body and mind have access to information from other sources outside the nervous systems. The bioenergies — heat, light, electromagnetism, sound, electricity as well as hormonal activities which are information/instructional packets for the organism — are transported, distorted and even amplified by CT states. Deleterious CT states will alter these instructions, giving misrepresentations to tissues, organs and cognition. This is of particular importance to any of the touch therapies. Therapeutic touch can be misinterpreted as in Schleip's interpretive interoception. Touch may be interpreted as invasive, sexual or even painful because of the psychic phenomena of anticipatory pain even though pain receptors are not actually activated

All of the above described activities and more are made possible by the whole body matrix system first postulated in 1941 by Szent-Györgyi. This non-neural, body-wide, instantaneous communication system is a good example of how and why body-oriented techniques can affect the organism on its deepest levels. It also reveals the dependence that later developed evolutionary structures, such as nervous systems, have on earlier, more primary life functions; a bottom-up model of development and functioning. A good example of the continuing development of these themes is the ongoing research on octopi who are primarily made up of collagenous forms of CT; they have muscles and nerves, but no bones. What reveals the matrix based, bottom-up model is that they organise movement independently of their CNS.

One point of interest is that, despite CNS dominance, they are now considered the “primates of the sea”; they have cognition and a sense of self. They are the first intelligent life form whose intelligence developed differently than ours. Intelligence has been developed twice in two different forms. The development of human intelligence is considered to be based on social interactions, the social intelligence hypothesis. The octopus is a solitary animal, even cannibalistic, eating its own species. Yet, they are curious, playful and will interact with humans. They can think abstractly, communicate, solve problems, learn, have memory, and plan for the future (Mather, 2019). The octopus developed intelligent behaviour and mind 600 million years ago, while our human

ancestors were still in the form of worms. (Humans have existed in their current form for only 200,000 years.) Life, and especially cognition, is not as dependent on recent evolutionary developments as currently thought, which raises the second point.

The octopus is a good example of the “downgrading” of a central nervous system as determining and directing the organism. An octopus has the same number of neurons as a dog or cat — 5 million — yet two-thirds of those neurons are outside the central nervous system, distributed among the eight legs. Because of the overemphasis on a central controlling system, octopi are sometimes referred to as having nine brains: a central brain and brains in the eight legs. According to Sivitilli (11/2021), the arms can be directed from the brain as well as independently. There is also a synchronicity among the arms, not involving the brain, as well as *decision making in each arm independently*. Furthermore, some information by-passes the brain entirely. The octopus’s arms operate independently of its CNS as well as independently of each other, but can co-ordinate when necessary — all without CNS direction or control. They can “think” with their arms (Sivitilli, Accessed 11/2021) returning us to Guimberteau’s observation “... chaotic system with functional determinism.” (Guimberteau, 2018, p. 149)

The concept of order and proportionality suddenly seemed to lose ground to non-linearity and apparent disorder, which in fact permits creative adaptability and the tendency for life to auto-organize in the most efficient way. (Guimberteau 2018, p. xiii)

Mather (2019) comments on how a coordinated system can function quite differently from ours and without CNS input. “Interestingly, gait analysis of octopus “walking” turned up no pattern at all in arm use sequence, quite unlike those in vertebrates and anthropoids. How can you have order without predictability?” (Mather, 2019, p. 10)

Octopi have a “mind” as well as different personalities (Mather 2019). “Although the sensory Umwelt and the decentralised control systems of the octopus do not generate the same kind of mind as in vertebrates, the octopus nevertheless has one.” (Mather, 2019, p. 22) Their consciousness, cognition and awareness is based on an entirely different formulation with two-thirds of their neurons capable of acting independently from the CNS and from each other. There is embodied cognition.

Of particular interest concerning CT; without bones for muscles to attach to, how does the octopus move? (Here I use the traditional understanding still prevalent in most medical and bio-mechanic

research despite recent understandings to the contrary. In addition to van der Wal, (2009) and Myers, (2012) Guimberteau pointed out that “...the classical anatomy books provided a reassuring and logical theory of the movements of tendons within their sheaths, but I found this to be completely inaccurate and hopelessly inadequate when I started observing living tissue through an endoscope” (Guimberteau, 2018, p. 10). In vertebrates, muscle contraction pulls on the tendons attached to the bones creating movement. Just as the octopus’ intelligence functions differently than ours, so it seems does its myofascial movement system. Yet again we find common ground. The human tongue operates in the same manner as what creates movement in octopi. Phylogenically earlier structures and functions are still relevant in later evolved systems.

Our bodies are vertebrate mechanisms that operate by muscle working on bone to move. The tongue is in a different muscular family, much like an invertebrate. It's entirely muscle — it's muscle moving muscle. Both move by compressing fluid in one section of a muscle, creating movement in another part. But we know little about exactly how that movement is initiated and so finely controlled. (Courage, 2014)

I speculate that why so little is known about how this movement is produced and controlled in tongues and octopi is because of the continuing downgrading of the importance of CT. Octopus researchers refer to connective tissue (Andon, 2019; Keir, 2007, 2016) involved in muscles but only in descriptive terms; muscle fibers or whole muscle groupings encased in CT. “Trabeculae [bands or cords providing support] of connective tissue accompany bundles of muscles.” (Andon, 2019, p. 42) They offer no understanding of the functioning role of CT in movement. Concerning movement they first speculate it is based on “contra muscles contraction” (Keir & Stella, 2007) and then “muscular hydrostat” (Keir, 2016), the “muscle moving muscle” by compression of the diameters of the various muscle fibers.

Support and movement in these structures depends on a form of hydrostatic skeletal support, referred to as a muscular hydrostat, in which the musculature serves both for force generation and as the support for movement. Because the muscle and other tissue of the arms and tentacles resist volume change, ...any decrease in one dimension must result in an increase in another. (Keir, 2016)

But the problem is that there can be no compression within the diameters of the muscle fibers without the surrounding, containing CT trabeculae creating a resistant force. These CT encasements are creating movement by taking over the functional role of bones. As already referred to, one main role of CT is that it creates erectness through hydrostatic pressure.

.... the toughness of this tissue is responsible for creating the hydro-static pressure which helps to hold the entire body erect and support its three-dimensional volume. (Job’s Body, 1987, p. 87)

It has also been suggested that the same muscular hydrostat functioning is underestimated in the creation of movement in humans (Schleip, et al, 2012).

What is so fascinating about connective tissue is its paradoxical nature; it both connects and separates, sometimes simultaneously. A good example on the macro level is the fact that it creates separate spaces within the body for organs to exist — septa — which yet allow for the organs to become integrated into the whole bodily system by ligaments between the organs and the internal walls of the septa, as well as adjoining septa being bound together by external ligaments. An example on the microscopic level is the ECM. Connecting fibrils create a lattice work between cells, creating spaces between those cells for primary life functions such as metabolism, oxygenation and waste removal to be performed. This book emphasised the fact that, through its functioning, CT is the bridge connecting body and mind functions between these two seemingly differentiated structures, so that bodily sensations inform the psyche as well as the reverse process. CT is also responsible for the two differentiated systems of psyche and soma because of its ability to create not just connection, but separation.

CT protects the organism in different ways from the resilience of the fascia to external impact, to the microscopic level of preventing bacteria and other invasive elements from spreading throughout the body, closing wounds, transporting fibrocytes to damaged and infected areas. Following Reich's original insight of muscular armor, CT tissue protects the organism from psychic impacts from both the external and internal environments of the organism by blocking unacceptable emotions, sensations, beliefs and movements that threaten the integrity of the system, because they cannot be integrated, "metabolised" consciously.

Besides the connection/separation theme, a main quality of CT that binds all of the touch-oriented therapies, either manual, movement or psychological, is its plasticity, its unique ability to adapt to local conditions both positive and negative, somatic and psychic. Under stress, it activates itself to provide more support, resistance and/or protection to a threatened area of the body or mind. It is then capable of re-organizing itself in an adaption to changing local conditions due to successful treatment and returning to its original state. The various touch techniques, as well as movement exercises, employed in many types of treatments, manual and psychological, utilise this fascinating phenomena. With the growing body of research revealing this aspect of CT functioning, it is

imperative that we incorporate this knowledge into our ongoing development of treatment modalities.

While true for all character structures/personalities, the schizoid model presented with its relationship to CT functioning is a clear way to show the body/mind connection, as well as the subjective, unified body/mind. CT binds psyche and soma to the point that, as van der Wal has shown, there is no anatomical differentiation as described in anatomy books or as Schleip has asked about any CT structure, “Where does it end?” The theme of differentiation between psyche and soma becomes less evident and its indivisibility comes to the fore. A shift from ground to figure.

By necessity, I have used a wide ranging multidiscipline approach in presenting the role of connective tissue in its many facets and functions for both body- and psychic-oriented therapists. The reason is that, while there is abundant literature discussing both psyche and soma as well as the body/mind conundrum, none are modelled on connective tissue as the bridge between these two. I have drawn on models hidden within older literature as well as more recent research showing more directly how the line between CT and other body tissues and functions is blurred, as well as revealing the closer functional relationship between psyche and soma. Yet, more needs to be done.

But there is an inherent advantage to this enforced multidisciplinary approach. It reveals to a surprising degree the common underlying themes of these diverse disciplines in both the physical and psychic treatment modalities. As an example, it is not at first evident that future development in artificial intelligence (Anderson, 2003), tissue regeneration (Dudas, 2008), the gut/nervous system interaction (Sharon, et al., 2016) and a sense of self (Solms and Panksepp, 2012; Davis, 2014) are all based on the same bottom up model, whereby earlier evolutionary and developmental levels form the foundation for, and *continue to function*, on the more complex levels via interactive feedback loops (Dudas, 2008; Porges, 2011) which mimics Reich’s (1967) original pulsation model! In fact, the functional phenomenon of feedback loops, as the Jacksonian principle shows, gives insight into the basis of trauma. If insects who, as far as we know, have none of the higher cognitive functions worked with in psychotherapy to treat PTSD, can be traumatised, it seems that it is imperative to look ‘more deeply’ into where and how the patient’s trauma is stored in the body and to have a better understanding of how to safely treat these patients.

The material presented here is by no means all-inclusive and the conclusions drawn will be continually elaborated, modified or proven wrong as research, clinical discoveries and treatment modalities evolve. But the fact that more attention and appreciation needs to be paid to connective tissue's forms, functions and structures within a broad range of treatment methods is beyond doubt. The inconclusiveness of this book is its strong point, hoping to interest and excite therapists of all stripes to look more deeply into their own methodology and techniques, in mutual support and development.