

Cancer Healing: Holding the Space and Neurobiological Research

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As a psychoanalytic psychotherapist for over 30 years, I have 'held the space' for many unhappy people, children and adults, so that they can find out something more about who they are, what is troubling them, and how to manage what is inside their minds in a different way. This is something people in my profession do: it is nothing special as the great psychoanalyst Winnicott would say, it is what we do on a daily basis.

1. Give people permission to trust their own intuition and wisdom. (Again to quote Winnicott, it is not helpful to rush in with 'what I think' until the person themselves is ready to think similar thoughts).
2. Give people only as much info as they can handle.
3. Don't take their power away. People need AUTONOMY to make their own choices.
4. Keep your own ego out of it...create a space for them to have the opportunity to think.
5. Help them feel safe enough to fail...transition and resilience...
6. Give guidance and help with humility and thoughtfulness
7. Create a container for complex emotions, fear, trauma etc
8. Allow them to make different decisions from the ones you might make...HOLDING SPACE is a complicated practice.

Words? Yes, not bad. Ears? Yes, not bad, or even better. But both need a very particular space for becoming really helpful. Providing, guarding and keeping this very particular space uncontaminated might be the most important part of being alive with and for others; oneself included. As research now shows, changes in internal space can indeed affect brain structure and the growth of new pathways within the brain.

For anyone, possibly without exception, the three words 'you have cancer' strike fear and dread into the heart, however much that same individual might have been struggling to turn a blind eye to 'the truth'. As John Bowlby said in 1979, there is the conflict between "Knowing what you are not supposed {or not wanting- JE} to know and feeling what you are not supposed to feel". As Bowlby says 'Pressure exerted on children to conform to their parents' wishes can be crude or subtle, but its effectiveness depends always on the child's insistent desire to be loved and protected'. So what is the way forward here? IS there a way forward? Does life end here and now? These ideas may swamp the individual and in themselves prevent further constructive thought. These symptoms are of course also classic indications of Post Traumatic Stress Disorder.

This idea is appropriately captured by the title of Bessel van der Kolk's influential 1994 paper [1], *The Body Keeps the Score*; that as much as trauma is deeply psychological, it is deeply physical as well. The present article focuses on how trauma impacts on the brain and the body in terms of physiology and neurobiology, and how this, in turn, affects our cognition, affect, and behaviour. In this book van der Kolk aims to review theories of the development of post-trauma symptoms, highlighting more recent theoretical approaches to trauma and the brain, to link neurobiological and psychophysiological findings from current empirical research, and to identify implications for the treatment of trauma-related disorders based on these findings.

Multiple clinical science theories of trauma have developed over the years, aiming at improving our understanding of the impact of trauma on the brain and, behaviour, as well as the development of psycho-pathological post-traumatic symptoms. While theories have been born out of existential, humanistic, feminist, psycho-dynamic, and other approaches, the primary approach most associated with the neuro-science of trauma is the cognitive science model, which does indeed map onto the psycho-dynamic model. More recently, this approach has expanded to include the domains of social and emotional factors, thus referred to as SCAN (Social, Cognitive, Affective Neuro-science), which is complementary to those aforementioned phenomenological models.

Currently, much of the research on trauma utilizes the fear-based model of Post-Traumatic Stress Disorder (PTSD). Although this model has been useful, current research in cognitive neuro-science, psycho-physiology and experimental psychology illuminate the need for theories that can account for the development of neurological differences and post-traumatic symptoms that arise from types of trauma in addition to war trauma. For example, the fear-based model may not completely capture the responses of people who have experienced interpersonal violence, sexual and physical trauma in a non-combative context, and of course the trauma of a cancer diagnosis, which is the subject of this paper.

The study of trauma and its effects on both the mind and body has been a central component of psychiatric research since the profession's inception [2]. Since the introduction of PTSD to the DSM-III, the understanding of the disorder's aetiology and phenomenology has advanced considerably. The emergence of behavioural theory led to a model of trauma-related disorders based around conditioned fear responses, and as such much of the primary research pathology has been focused on increased cognitive, emotional, and physiological reactivity (Liberzon and Spirada, 2008). Initial neuro-imaging studies of PTSD fear conditioning posited that dysfunction of the ventromedial prefrontal cortex resulted in a failure to inhibit an overactive amygdala.

Brewin [3] argues that it is a mistake to think of PTSD only as a fear disorder, given that other emotions are just as commonly experienced as well as fear. In contrast to anxiety, particularly in relation to specific phobia, PTSD is characterized by a sense of continuing current threat, which leads to a permanently higher state of arousal. We have found that cancer survivors who have gone down the orthodox treatment route involving chemotherapy and radiotherapy still feel the trauma not only of diagnosis but of 'rejection' once the treatment has finished and they have been discharged from the care of their consultant. They live in this state of 'a sense of continuing current threat'. Brewin also distinguishes PTSD from phobia by pointing to two main symptoms: flashbacks and traumatic nightmares, in addition to intrusive memories. Flashbacks in particular suggest a dissociative factor in to PTSD picture, given the inherent distortion of time that comes with the sensation of events happening again in the present. Brewin theorized that enhanced encoding of situationally accessible memories related to trauma with impaired encoding are written into the autobiographical memory system thus leading to the development of flashbacks. A consistent theme of dissociative symptoms has been shown to occur within clinical presentations of PTSD, leading to Brewin and Lanius's model of trauma-related altered states of consciousness (2008) which can affect four separate dimensions, namely Time, Thought, Body and Emotion. These four dimensions are intimately related.

So how indeed does this relate to cansurvivors? After my own diagnosis of breast cancer and resultant mastectomy seven years ago I decided to call a halt to further suggested treatment and do some research. This resulted in the development of the site www.cansurviving.com which is now accessed in 48 countries and gets up to 10K visitors a month. Currently we have 670 members, who can post on different forums, from Research, to Diet and the Body, to Mind and Spirit, including Depression and fear of dying (in a Forum called 'Will you or Won't You?' Because of course we will all die one day). What we hope to achieve (and do achieve according to the feedback we receive) is to help people survive and sail on after they have received a traumatic diagnosis, whichever route they decide on. There are of course no guarantees whichever road a person chooses to go down, but there are ways in which exploring 'life after cancer diagnosis' in a group is a helpful and constructive way forward. As one of our long-time members Liz Butler, a nutritional therapist, posted in the Research Section of the site: "I believe the stress of incompletely processed emotions has a large role to play in illness, including cancer. A paper published by the Violet Cancer Institute supports this idea with an exploration of the relationship between chronic fear and cancer [4].

Fear, then, is a chain reaction in the brain that happens when one encounters a potentially harmful stimulus. The amygdala is the part of the brain that receives information from many parts of the brain and interprets this information to generate the emotion of fear. When the amygdala generates a fear emotion, it sends impulses the hypothalamus. The hypothalamus then sends impulses to many different parts of the body to trigger a fight-or-flight response. Fear hormones are secreted by the adrenal gland. The effect of adrenaline (epinephrine) is increasing heart rate, hypocapnia and decreases blood flow to the brain. The effect of cortisol is increasing blood glucose levels by converting stored glycogen and fats into blood sugar. It also suppresses the immune system and causes inflammation. So the prime cause of cancer is an increase in the amounts of ROS which stands for Reactive Oxygen Species - a more technical term for 'free radicals'.

The aim of this review is to show the effect of chronic fear about the cause of cancer in humans by reviewing related clinical studies and biochemistry of fear and cancer. The role of fear, adrenaline and cortisol in causing the hypoxia in tissues is mentioned in this article.' She ends her post by a picture which spells out this little poem: "And then I realised that to be more alive I had to be less afraid so I (gradually I might say - JE) lost any fear and gained my whole life."

So the stress of cancer diagnosis is accompanied by a host of physiological responses, which includes the release of stress hormones and neurotransmitters. The hypothalamic-pituitary-adrenal (HPA) axis system, for example, plays an important role in delineating the response to stress; this response is triggered by the release of corticotropin releasing factors (CRF). If not mediated by other factors, this relationship may have prolonged negative effects and outcomes in the body, as in the development of cancerous growths. It is possible that certain pre-existing physiological abnormalities within patients are triggered by trauma experiences, resulting in PTSD signs and symptoms. For example, Sherin and colleagues (2011) posited that abnormal regulation of cortisol and thyroid hormones in the endocrine system may be a risk factor for the development of PTSD. Lower concentrations of cortisol have been found in combat veterans diagnosed with PTSD, and increased urinary excretion of dopamine have been found among PTSD patients. Additionally, effects of serotonin (5HT) on stress responses vary according to several individual factors, and aminobutyric acid (GABA), a major inhibitory neurotransmitter in the brain, dampens behavioural and physiological responses to stressors. It has been established that uncontrollable stress leads to alteration of the GABA receptor. Studies also suggest that decreased hippocampal volumes and increased amygdala reactivity may represent a biological risk factor for developing PTSD, as they are associated with the severity of trauma and related memory impairments (Sherin, *et al.* 2011). Research with those suffering specifically from the trauma of cancer diagnosis has yet to be undertaken, but it is clear that the same pathways are involved.

When I was first diagnosed with breast cancer I dreamed that I was driving my car into a very dark cloud, with my husband at my side. I could see that the clouds were getting lighter later - but how much later? Yes, a storm was brewing. I can now look back, and I really resonated with something Haruki Murakami said in his novel *Kafka on the Shore* (2005): "Once the storm is over you won't remember how you made it through, how you managed to survive. You won't even be sure, in fact, whether the storm is really over. But one thing is certain. When you come out of the storm you won't be the same person who walked in. That's what this storm's all about".

One of our members told the story of how a teacher told his teenage class that while cows ran away from a storm (which would catch them up anyway) buffalo would walk right into it. Now this site exists nearly seven years later, for other 'buffaloes' who walk into the storm. Take heed of your dreams, we suggest, (we have a Forum for this too) and give back when you too emerge from the black clouds (we also have a Forum on Depression which can help on the dark days). As Atul Gawande said in his Reith lecture (on the site) 'if talking

were a drug it would cost thousands of pounds'. As he said: 'We've had I think an about 50 year experiment with medicalising mortality and the ends of lives, with casting it as just another problem for us to treat like any other, and I think that experiment is failing. But we have an alternative emerging. It's one where we learn and elicit what matters most to people in their lives besides just surviving, and then we use our capabilities not to sacrifice it but to protect, to protect it –to protect those priorities that people have. And I think that is our opportunity.' As Professor Allan Schore said [5], findings now converge in new and exciting ways 'I suggest that maturational delay and stress impact significantly on the right brain hemisphere: 'the right mind'.

There is of course much more than can be adequately addressed in this short article, which I have written in order to indicate how 'holding the space' and thinking about the traumatic effect of a cancer diagnosis can help the diagnosed person towards a healthier sense of self, in mind, body and spirit, via changes in brain pathways. Recently an Australian member said he was recommended this site as being 'the best on the web for healing cancer' by some American colleagues. Quite an accolade. The international site grows and changes as new members come on board; this is a resource which has been called 'a life-jacket' for those who feel they are drowning after being told they have cancer. Two other Australian members wrote: 'It is the mindset to get through the problem that we find helps so many people with any issue they may be facing and your website could quite often be the "Key starter" for this.' So from game changer to brain changer, this free site offers possible ways forward post-diagnosis.

As I have written in other articles, the choice is left to the individual, as despite different advice from well-meaning friends the 'cancer patient' may feel assailed internally and externally in a way that does indeed change parts of the brain. Taken together, findings from neuro-science and psycho-physiology have become significant sources of information for developing further psychological theories of trauma, particularly moving beyond solely fear-based trauma models and into models which emphasize the importance of shame, body awareness, emotion regulation, numbing, positive emotions, and interpersonal processes- all of which are issues in cancer diagnosis and its aftermath. These theories have led to a deeper understanding of the mechanisms of existing therapies, as well as to the generation of novel interventions. We suggest that www.cansurviving.com is just such a 'novel intervention' which has helped many people both to understand and accept their current feelings before becoming empowered to move beyond them, thus again allowing new pathways in the brain to grow.

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