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**The Application of Polyvagal Theory in the Treatment
of Complex Post Traumatic Stress Disorder**

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Abstract

Complex post-traumatic stress disorder (PTSD) is a disorder distinct from the classic understanding of post-traumatic stress however this is not accepted by the established medical and psychiatric communities. There is much debate about the nature of trauma with established institutions content that the many symptoms seen in complex PTSD can be included under associated aspects of classic PTSD with no need for subtyping or the creation of a new category of trauma. This essay argues that complex PTSD deserves to be acknowledged as a distinct disorder because the way the trauma is inflicted in complex trauma differs from classic PTSD and there are many symptoms observed in complex PTSD that are not observed in classic PTSD. These symptoms can be exacerbated by traditional trauma treatment methods and require a more specific approach. There is an ethical dilemma at the heart of the treatment of complex trauma insomuch as when victims enter traditional talking therapies there is a risk of strong physiological and emotional reactions occurring. This is a form of re-traumatisation and it is unethical not to provide victims with a means to address and cope with such distressing experiences. Polyvagal Theory is an elegant working model of the nervous system, grounded in evolutionary theory that provides good insight into the manner that trauma is inflicted and provides a sound neurophysiological method to address the challenging symptoms of complex PTSD and lowers the risk of adverse events during treatment. Some methods are often already a part of the therapy process but polyvagal theory provides an explanation for why such fundamental aspects of therapy are so effective while others seek to intervene in the troubled physiological process at work in complex trauma and provide a sense of calm and control.

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Introduction

This essay proposes that complex post-traumatic stress disorder (PTSD) is a delineated syndrome distinct from classic PTSD, rather than a mere associated aspect of PTSD. Further, this essay proposes that polyvagal theory provides unique insight into this disorder and offers effective treatment measures.

In Chapter one it will be seen that the accepted symptomology and treatment of classic PTSD is not in keeping with complex PTSD and does not provide a comprehensive enough framework to understand complex PTSD or aid sufferers of it. This is clearly seen in the differing symptoms of complex PTSD, symptoms that are not noted in the presentation of classic PTSD. Such symptoms include states of hyperarousal and dissociation, negative changes to self-concept and self-perception, loss of meaning and disturbing somatic experiences. While some acknowledgment of the more extensive symptomology of complex PTSD is made, it is reduced to a mere associated aspect of PTSD and not considered significant enough for closer consideration. Fundamental to complex PTSD is the way the trauma is inflicted; it occurs over an extended period and is interpersonal in nature. This differs from classic PTSD which is attributed to a distinct event that may be impersonal in nature. This lack of consideration for the differing mechanism and symptomology is due in part to the inability of proponents of complex PTSD to establish clearly defined parameters for the disorder and the excessively high standards set by the established medical authorities to accept the formulation of a new disorder. While it is true that the case made for the existence of a complex form of

PTSD is hard to prove given the current medical and psychiatric requirements and the overlap of symptomology with other potentially co-morbid disorders, this essay argues that from a practical point of view there is a compelling need to differentiate the classic form of PTSD from the complex form. This need stems from the significant deficit in the classic formulation of PTSD to explain and treat the complex form of PTSD. This is noted most clearly in the treatment plan for each disorder where the classic PTSD approach is ineffective and potentially harmful to sufferers.

Chapter two outlines Polyvagal Theory. It will be shown that polyvagal is a neurophysiological theory that attempts to explain the symptomology of complex PTSD via an evolutionary and functional understanding of the nervous system. Polyvagal Theory posits that the bidirectional nature of the vagal nerve can be exploited to provide feedback to the brain from the body, providing vital information about bodily state but also allow the body to be calmed by stimulation of the vagal nerve in the brain. Further to this the theory describes three distinct neural circuits within the vagal structures that provide a dynamic coping mechanism for all vertebrates in the face of threat. An understanding of the evolutionary and hierarchical mechanism of these neural circuits provides an explanation for the debilitating physiological and emotional symptoms seen in complex PTSD. The theory posits a clear mechanism to explain the peaceful social experience of humans during times of calm via a proposed social engagement system mediated by the most recently evolved mammalian vagus nerve circuit. Vitally, Polyvagal Theory also accounts for the hyperarousal states found in complex PTSD by describing the activation of more primitive vagal circuits that stimulate the fight/flight responses via the sympathetic nervous system. If a threat is unavoidable the most primitive circuit induces shut down and dissociation.

Chapter three outlines the application of some interventions that utilise the polyvagal approach. This essay proposes that Polyvagal Theory is an effective means of treating many of the symptoms of complex PTSD and that it is unethical to ask victims of complex PTSD to talk about and re-experience trauma without providing a means for them to regulate the emotional reactions that such discussion may induce. For this reason, this essay proposes several interventions that exploit an understanding of Polyvagal Theory and provide sufferers with a means to control the often unsettling emotional and physiological symptoms of complex PTSD. These interventions take the form of psycho-education in the hope of changing victim narratives and more direct attempts to exploit the inducible nature of the theory's proposed social engagement system. The explanatory power of Polyvagal Theory with respect to the physiological and emotional symptoms of complex PTSD provides a means for victims to see their experience as an adaptive response albeit an unpleasant experience. From a neurophysiological standpoint, Polyvagal Theory seeks to exploit the bi-directional nature of vagus nerve transmission by attempting to stimulate the mammalian vagus circuit and provide a sense of calm. The practise of yoga and meditation provides a means to modulate sympathetic and parasympathetic nervous response and alter biochemical factors for the better resulting in a greater sense of calm and strength in the face of day to day stress as well as reducing the intensity of hyperarousal and dissociate states.

The specific symptomology of complex PTSD and the differing requirements for treatment when contrasted with classic PTSD demand that complex PTSD is a disorder and not merely an associated aspect of classic PTSD. This appears to be a challenge to achieve given the strict requirements of the current medical model in use. This essay

argues that it is essential that sufferers of complex PTSD should not be treated in the same way as those who suffer classic PTSD because the specific hyperarousal and dissociative states seen in complex PTSD may be exacerbated by such treatments. Further, it is unethical to induce such unsettling emotional states in victims without providing a means for victims to understand and ameliorate their experience. Polyvagal Theory provides just such an explanatory model and provides suggestions for neurophysiological interventions to aid sufferers.

Chapter One

The Trauma Spectrum

The concept of trauma with its insidious aftermath is an old one. This can be seen in ancient proverbs from China and Iran suggesting an understanding of post traumatic cognitive changes:

‘Having been bitten by a snake, he is scared of a rope on the ground’

The first reports of the physiological effects of trauma were medical reports in the form of tachycardia in soldiers who fought in the American Civil War (1861-1865) (Pridmore & Khan, 2011). The classic understanding of PTSD is that of an event that fundamentally changes the world view of an individual. There is a before and after, a clear demarcation in the life of the sufferer. Janoff-Bulman’s notion of ‘shattered assumptions’ covers this well:

“...regardless of population...we have found remarkable similarities across different victim populations. The basis for these similarities is apparent in the words and responses of the survivors: The traumatic event has had a profound impact on their fundamental assumptions about the world.”

(Janoff-Bulman, 1992, p. Loc 983)

Janoff-Bulman goes on to state that such a traumatic experience is ‘outside the range of human experience’ and would be distressing to just about anyone who had the misfortune to experience it.

When we consider the specific details of such an event we discover that an individual experiencing it was at threat of death or physical injury and thus experienced sensations of great fear and helplessness. The psychological effects of such an experience are profound: victims may suffer distressing dreams and recollections of the event, flashback episodes in which the trauma is relived and acute distress in the face of any symbolic reminders of the event. (Baker, 2010, p. 19).

While this seems an obvious concept now, acceptance of PTSD was not so straight forward. It was a challenge to make the medical and psychiatric communities accept that such a condition existed despite the many war veterans that suffered it. Ultimately it was the vast number of Vietnam war veterans who struggled to reintegrate into their pre-war lives and communities that persuaded the medical community to accept PTSD as a true disorder. This ultimately led to a great deal of research into the field of post-traumatic stress (van der Kolk B. , 2014, p. 19).

The concept of a complex form of PTSD originates with the work of Judith Herman (Herman, 1992). At this time it was apparent to mental health professionals that there were aspects of trauma and its aftermath that did not fit into the established formulation for PTSD. Such atypical responses were collected under the rubric of ‘Disorders of

Extreme Stress Not Otherwise Specified' (DESNOS). Herman felt that this attempt to explain the myriad and complex aspects of atypical trauma was not adequate. She noted that:

“The current diagnostic formulation of PTSD derives primarily from observations of survivors of relatively circumscribed traumatic events. This formulation fails to capture the protean sequela of prolonged, repeated trauma”

(Herman, 1992)

Within this statement is the kernel of the distinction between classic PTSD and complex PTSD: The trauma is not a single event but rather a series of repeated traumas and the symptoms of such repeated trauma do not fit the relatively straightforward pattern of classic PTSD but rather are ‘protean’, taking many forms and difficult to fit into a structured framework. A further vital aspect of complex PTSD is the interpersonal nature of it. Such trauma is inflicted by another human being and because of this interpersonal dimension the symptoms are often more severe and long lasting than a trauma inflicted by an impersonal agent such as a natural disaster or other such random accident. The extent of symptoms associated with complex PTSD far exceeds that seen in classic PTSD, underlining the pernicious nature of such relational trauma. Bessel van der Kolk outlines such symptoms:

- Loss or impairment in ability to regulate emotional state often resulting in overwhelming emotions that the sufferer fears she has little control over
- Unsettling alterations to experience of consciousness manifesting as amnesia, dissociative episodes and depersonalisation
- Disruptive shifts in self-perception manifesting as chronic sense of guilt, shame or responsibility
- Deleterious impact on ability to form relationships due to lack of trust or fear of intimacy
- Experiencing the effects of trauma somatically through bodily ailments with no medical explanation
- Changes in systems of meaning, loss of faith or belief.

(van der Kolk, 2001, p. 9)

Van der Kolk came to realise the inadequacy of the established framework for trauma during his work with trauma victims because he noted that such victims were not presenting with the classic PTSD symptoms of intrusive thoughts and flashbacks but rather problems with emotional regulation, depersonalisation and dissociation.

Complex PTSD Symptomology

Emotional Regulation

The inability of victims of complex PTSD to regulate emotional states manifests itself in troubling ways that prevent sufferers from coping with daily tasks and challenges. An individual who has been serially traumatised may find it difficult to cope with minor stressors in daily life or may have very strong reactions to mild stimuli (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 377). Further to this they have great difficulty calming down after strong emotional responses. This persistent overwhelm of emotion leads to increased incidents of depression, anxiety, phobias and paranoia (Herman, 1992, p. 380). This state of over arousal and inability to dampen down such strong emotion understandably leads to other coping mechanisms that are often self-destructive in nature; thus, sufferers often engage in self harm, fall into substance abuse or develop eating disorders. Sexual compulsivity is also seen along with general risk taking behaviours. Problems with anger and impulse control are also often common. The occurrence of anger and aggression in victims of complex PTSD is possibly explained by a survival mode theory (Dyer, et al., 2009, p. 1101) whereby an individual exists in the fight/flight mode of being when reminded of a traumatic event which in turn activates cognitive biases that serve to confirm the presence of danger. These biases present the individual with a justification for anger and aggression making such behaviour seem appropriate. Excess hostility is often high in sufferers of complex

PTSD and is correlated to the impaired ability to regulate emotional states and diminished impulse control.

Dissociation

A defining feature of complex PTSD is the dissociative states that sufferers may enter during periods of stress. A distinction is drawn between the usually non-dissociative hyper-arousal states found in classic PTSD and the dissociative states more commonly found in those who have suffered chronic trauma such as childhood abuse. A corticolimbic inhibition model has been postulated to explain these two distinct responses to trauma (Lanius, et al., 2010) in which a ‘cognitive fragmentation’ is experienced due to the unique way that memories are formed during traumatic experience. The non-dissociative form of PTSD is an under modulation of the limbic system resulting in re-experiencing of traumatic events through intrusive memories and emotion. This contrasts with the dissociative form seen in complex PTSD where neurological imaging of sufferers demonstrates an over modulation of the limbic system by higher brain regions such as the prefrontal cortex. The corticolimbic inhibition model posits that suppression of the limbic region of the brain is initiated when a certain threshold of anxiety is reached, dampening emotional experience and protecting the sufferer from re-experiencing the worst of the traumatic event. The division in experience of the world has been described as ‘structural dissociation of the personality’ (van der Hart, Nijenhuis, & Steele, 2005). In this description of dissociation, the traumatised aspect of mind is locked away from everyday experience leaving another more functional part of the mind to carry out the rudimentary tasks of existence. This dissociative aspect to complex PTSD is the most troubling symptom and often causes victims to lose all sense of themselves and their place in the world. Herman (1992) covers this when she says

that a sufferer of classic PTSD might say 'I am not myself' or 'I am a different person' while a sufferer of complex PTSD might say 'I am not a person', underlining the more serious nature of this form of trauma. An alteration to sense of self concept is a fundamental aspect of complex PTSD due to the interpersonal aspect of the trauma. For those who have not suffered trauma, memory retrieval is usually a straightforward affair with easy cognitive access to previous experiences. For sufferers of complex trauma, a protective mechanism is often at work that has partitioned memories of traumatic experiences from everyday experience. This fragmentation of memory can be problematic and distressing particularly if traumatic memories surface at unexpected times. Or, due to the poor integration of memories, sufferers have difficulty reconciling the experience of who they are with the experience of trauma and how they perceive the world (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 377).

Issues of self-perception

The uniquely interpersonal aspect of complex PTSD results in victims suffering disturbances to self-perception that are not noted in the impersonal experience of classic PTSD. Victims of such chronic interpersonal trauma believe they are fundamentally damaged, defective, undesirable and are full of shame and guilt (Dyer, et al., 2009) A sense of helplessness and hopelessness with feelings of despair colour everyday experience. Unsurprisingly these painful disturbances to self-perception manifest as depression, suicidal ideation and chronic anxiety. A key aspect of complex trauma is a sense of being held captive, an inability to escape the perpetrator of abuse, resulting in psychological adaptation in an attempt to cope and explain traumatic events. Further to this the abuse is a shocking act of betrayal perpetrated by a trusted care giver. This is particularly seen in childhood abuse and the way children view the world and their place

in it. Herman (1992) points out that to survive, a child must attempt to ‘accommodate the judgements of others’ often at great cost to himself resulting in a fragmentation of personality that radically alters his self-perception for the worse. Along with this accommodation of others’ judgements the naturally narcissistic attitude of young children leads them to believe that they are the centre of the universe and are the cause of events in their own lives. Thus, a child believes that he is the cause of the mistreatment he suffers and comes to believe that he is inherently bad and deserving of such abuse. Self-belief of this nature inevitably results in the painful feelings outlined above (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 378). Herman suggests that this childhood adaptation is propagated into adulthood via a ‘biological infantilism’ in which adult victims come to depend upon their persecutor for support just as a child has no choice but to turn to his abuser for emotional support. Such behaviour in adult relationships may account for the persistence of victims staying with an abuser and the paradoxical anxiety that escaping an abusive relationship may illicit.

Relationships

Establishing intimate relationships poses a challenge for victims of chronic trauma. The sickening betrayal of childhood innocence by a loved caregiver shatters an individual’s ability to fully trust others in adulthood. Intimacy is therefore a great challenge for sufferers of complex PTSD. Van der Kolk describes this fearful experience well:

“Unresolved trauma can take a terrible toll on relationships. If your heart is still broken because you were assaulted by someone you loved, you are likely to be preoccupied with not getting hurt again and fear opening up to

someone new. In fact, you may unwillingly try to hurt them before they have a chance to hurt you”

(van der Kolk B. , 2014, p. 211)

Such damage to an individual’s ability to connect to other humans is a particularly tragic aspect of complex PTSD, and distinguishes it from the classic form of PTSD because a victim’s best hope of recovering from trauma is via connection with other familiar and caring human beings. The pernicious nature of complex PTSD strips the victim of this vital survival mechanism inducing instead an avoidant attachment style with social withdrawal and hostility (Spitzer, et al., 2009).

If, however, a victim manages to overcome the challenges of establishing a relationship there is great risk of a re-victimisation because survivors of chronic interpersonal trauma have no frame of reference for a healthy relationship and often do not pick up on the inappropriate behaviours of others and do not see the danger signs of potential abusive behaviour (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 378) Or, it is possible that the victim will understand that the behaviour is unacceptable but feels powerless to do anything about it, acting out of the infantilism noted above.

Somatisation

Many traumatised individuals suffer physical illness and complaints that defy the medical communities’ attempt to find a cause (Spitzer, et al., 2009). No bodily system appears to be free of this, with pain and problems occurring in the digestive system, cardiac complications and immune system weakness along with more obscure and intricate problems reported such as tingling in extremities, seizures and temporary blindness (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 379) Attempts to explain

these phenomena look to the chronic and repeated nature of the trauma victims have endured. The normal stress response in chronic trauma is compromised by repeated activations which is not in keeping with a system that is designed to be triggered occasionally to maintain survival. This chronic aspect suggests that the body finds itself in a near constant state of arousal causing an over activation of the parasympathetic and sympathetic nervous systems (van der Kolk B. , 2014, p. 217). This persistent state of arousal has consequences for the hormonal and limbic systems and leaves sufferers at a disadvantage in evaluating the emotional significance of incoming emotional stimuli. It has been suggested that repeatedly traumatised individuals use the body as a means of symbolically expressing their pain having exhausted or being unable to express it verbally. In some cases, the psychological aspect of trauma is absent entirely with apparently inexplicable physical symptoms being the only remnant of past trauma (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 380).

Value systems

Unsurprisingly, the litany of painful symptoms listed above often radically alters the value system an individual subscribes to. Such shifts in meaning can manifest as a despair, with a sense that life has no purpose and with this a rejection of the belief system the sufferer was brought up in. Herman describes this painful experience as

“...the bitterness of being forsaken by God and man. These staggering psychological losses most commonly result in a tenacious depression. Protracted depression is reported as the most common finding in virtually all clinical studies of chronically traumatised people”

(Herman, 1992, p. 382)

A learned helplessness may invade life, with a strong sense that the sufferer can make no positive changes in his life and society at large does not care and will not help. This attitude makes it very difficult for a sufferer to move forward with his life and poses a problem for the therapeutic process (Luxenberg, Spinazzola, & van der Kolk, 2001, p. 380).

The Debate

The quite specific list of symptoms noted above may lead one to believe that complex PTSD is a well-established and widely accepted response to trauma and that complex PTSD enjoys the acceptance and support of all professional mental health bodies. Unfortunately, this is not the case. The most glaring dismissal of complex PTSD as a true and delineated syndrome is the unwillingness of the American Psychiatric Association to permit entry of complex PTSD into the Diagnostic and Statistical Manual (DSM) as a distinct entity. For many mental health professionals, the prevalence of complex PTSD symptoms in clients presenting with a history of chronic trauma was too significant a finding for complex PTSD not to be given the recognition it deserved as a distinct disorder. The most noted of these attempts was a field trial undertaken (Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997) with the intention of proving sufficient evidence for inclusion of complex PTSD in the DSM 4. This investigation demonstrated that the symptoms of complex PTSD were particularly prevalent in survivors of sexual and physical abuse and most common when both forms of abuse were present. The study suggested that the terror and sense of captivity found

in such abuse had a profound impact upon victims. This study was also unique in that it investigated the nature of abuse that might cause complex PTSD symptoms as well as the age of exposure to such abuse. The study suggested that complex PTSD is a useful construct, highlighting the fact that the criteria for classic PTSD just do not have sufficient explanatory power to account for the more complex victim responses to this form of trauma. However, the authors also noted that at that time the criteria for complex PTSD had been hastily assembled and the sensitivity and specificity of symptoms was not well established and further work was required. Ultimately, the study failed to persuade the authors of the DSM 4 to permit admission of complex PTSD as a true disorder.

In the years since the field trial for inclusion of complex PTSD in the DSM 4, discussion has attempted to clarify the need for subtypes in the PTSD diagnosis. Investigation (Dalenberg, Glaser, & Alhassoon, 2012) into the requirements for such subtyping outlines the requirements for a true subtype to be established. From this we can see that the field trial fell short on the definitional requirement for a true subtype in so far as the criteria for complex PTSD as a subtype was not easily measurable despite that unique symptoms were quite clear to see. This criteria failure has also been demonstrated on cluster analysis in which the demarcation between classic and complex PTSD could not be clearly established based upon the currently accepted unique symptoms of complex PTSD (Taylor, Asmundson, & Careleton, 2006). This lack of a clear demarcation for complex PTSD provides further trouble for subtyping because, based upon DSM requirements, Borderline Personality Disorder, Major Depressive Disorder and Disorders of Extreme Stress Not Otherwise Specified (DESNOS) share an overlap of symptoms with complex PTSD. This overlap demonstrates the problem of meeting the

strict criteria required for psychiatric diagnosis and further highlights the fact that no clear measure for complex PTSD has been established (Resick, et al., 2012). Complex PTSD should also demonstrate a differing structure to classic PTSD or a differing functional mechanism. The structural aspect of this argument is hard to support because sufferers of complex PTSD often present with the classic symptoms of PTSD along with the further associated symptoms of complex PTSD suggesting that there is not a distinct structural difference between the two. Stronger support of the complex subtype can be found when the mechanistic requirement is considered. The mechanistic requirement demands that there must be a clinically meaningful difference between subgroups with respect to the course of the disorder, comorbidities, and the treatments applied. Complex PTSD fits this requirement quite well in so far as the nature of the disorder is quite different to classic PTSD, having several symptoms that are absent from classic PTSD, some of which can be illustrated clinically such as the unique brain scans already discussed. Treatment too differs quite markedly, particularly with respect to the modulating of emotional dysregulation.

There are several arguments in defence of subtyping for PTSD the strongest of which relate to the differing treatment regimens for each form of PTSD and its prevalence. In an attempt to dismiss complex PTSD as a distinct disorder critics suggested that it was not common and that the exposure based treatments used in classic PTSD are just as effective in the complex form (Resick, et al., 2012) thereby undermining the meaningfulness of such a distinction. However, these critics drastically underestimated the prevalence of complex PTSD in the population and failed to see that the not only are treatments for classic PTSD of little use for the complex form of PTSD but can in fact be harmful (Herman, 2012). The potential harm of such treatment to sufferers of

complex PTSD stems from the primary symptom of lack of emotional regulation. Putting an individual with poor ability to regulate emotional state through an exposure based therapy could result in profound and distressing emotional responses that may prove near impossible to regulate. This experience could in itself be described as a form of trauma and result in harm to the individual, is ethically very questionable and could be a drastic setback to recovery.

The need for some members of the mental health profession to pigeon hole individuals into clearly demarcated diagnoses established against a well-defined list of symptoms has resulted in an unreasonably high bar being set for acceptance of complex PTSD as a distinct disorder. This results in an unfortunate situation from a research point of view because without acceptance as a distinct disorder by established and influential mental health bodies, little funding will be forthcoming for further investigations into complex PTSD. This is unfortunate because the treatments for complex PTSD could be far more focused and effective if a distinction was made as the concept of a distinct complex form of PTSD is far more parsimonious than the current overlap of comorbidities that the symptoms of complex PTSD currently straddle. Perhaps one way around this problem is to look upon PTSD as a spectrum (Goodman, 2012) with sufferers presenting with attachment and emotional dysregulation on the complex end or to see complex PTSD as a variant because there is clear overlap in so much as PTSD must be present for complex PTSD to be observed (Bryant, 2012).

Chapter Two

Polyvagal Theory

The Polyvagal theory is a concept of mammalian nervous system operation posited by Stephen Porges. The vagus nerve (also referred to as the 10th cranial nerve) can be described as a conduit or portal from the body to the brain, however approximately 80% of the communication from the vagus is afferent, meaning that most of the information carried by the nerve fibres travel from the body to the brain. This bi-directional communication provides mammals with a means for the body to communicate its state to the brain. The vagus projects into the body from the brain stem in two ways: One part of the nerve regulates the muscle of the face, head, heart and lungs while the second projection goes further providing influence over the visceral organs and digestive tract. The vagus also projects from the body into the brain with significant interaction with both the higher centres of the fore brain and the more primitive emotional regulation centres of the limbic system. The basis of a vagal stimulation theory can be illustrated through the interaction of this efferent/afferent pathways: Stimulation of the visceral afferent pathways can alter the regulation of higher brain structures which in turn can alter the activity of organs and muscles on the efferent pathway such as face, heart and lungs (Porges S. W., 2001, pp. 126-129).

Within this basic mechanism of these two branches of vagal activity, the polyvagal theory considers three further neural circuits found within the autonomic nervous system. Each of these circuits represents a distinct evolutionary stage in the development of the vertebrate nervous system. (Porges S. W., 2001, p. 126) The three systems comprise:

- A social communication aspect regulating facial expression, listening and vocalisation. This aspect of the vagal activity is most recently evolved and present only in mammals and accounts for the important social interactions that are a vital part of mammalian life, particularly humans. This uniquely mammalian system is termed the ‘social engagement system’ (Porges & Furman, 2011, p. 113). This social engagement system includes regulation of the eyelids with consequences for social gazing and gestures. Control over the middle ear muscles is also exercised which modulates the ability of humans to extract the human voice from background noise. Muscles responsible for ingestion and sucking, along with the muscles responsible for swallowing, vocalisation, breathing, head turning and tilting. Altogether this collection of muscle plays a vital role in the ability of mammals to recognise, interpret the social activities of others and respond in a manner that might ensure that the safety of a good social bond is established.
- A mobilisation mechanism responsible for the fight/flight behaviour seen in most vertebrates. Activation of this pathway provides the endocrine and cardiovascular requirements for flight or defence through stimulation of the endocrine system providing adrenaline and cortisol and stimulation of the heart and lungs to meet physiological requirements.
- An immobilisation mechanism causing behavioural shutdown and death feigning in the face of overwhelming danger or near death.

“The Polyvagal Theory, based on the neurophysiological and neuroanatomical distinction between the two branches of the vagus,

proposes that each branch supports a different adaptive behavioural strategy. The theory is based on an understanding of the adaptive behaviours supported by three neural circuits, each representing a different phylogenetic stage of the autonomic nervous system”.

(Porges S. W., 2003, pp. 505-506)

The three systems outlined above operate under a response hierarchy with each step down representing a descent into a more primitive coping mechanism. Movement down through the systems occurs if the one employed does not provide safety in the face of danger, ending ultimately in the shut down and immobilisation of the last stage. The three systems provide a dynamic and adaptive means for humans to cope in their environment.

“The phylogenetic order, in which these neural circuits appeared, represents a response hierarchy in mammals with the most recent neural circuit responding first”.

(Porges W. S., 2007)

When the environment is safe the socialisation system operating from the ventral vagal complex is dominant providing a means for social bonds to form and safe communities to develop. However, if a threat presents itself the mobilisation circuit is activated, stimulating the sympathetic nervous system, providing the means for defence or flight.

If the threat becomes truly life threatening and unavoidable the most primitive circuit operating from the dorsal vagal complex is activated causing shut down of behaviour and a numbing to the environment. It is in this state, when a life-threatening situation is unavoidable that trauma may occur.

“The polyvagal theory proposes that during danger or threat the older, less social systems are recruited. The older systems, although functional in the short term, may result in damage to the mammalian nervous system when expressed for prolonged periods.”

(Porges S. W., 2001, p. 130)

The mechanism of this hierarchical system means that the engagement of a system below negates the activity of the one above it. Therefore, activation of the mobilisation system along with the associated sympathetic nervous system physiological responses shuts down the social communication activity of the vagus. Likewise, activity of the immobilisation system shuts down the fight/flight response of the mobilisation system.

This step down of response is modulated by the vagus nerve's control over the heart in the form of the 'vagal brake'. In mammals, the most recently evolved branch of the vagus nerve is myelinated in contrast to the primitive and vestigial branches that do not share this characteristic. Myelin is a protein that encases the more recently evolved mammalian vagus and provides for a finer modulation of nerve impulse propagation along the length of the nerve (Porges S. W., 2001, p. 129). In mammals, the heart is

directly enervated by this myelinated vagus nerve providing a swift and precise means of controlling cardiac output. When vagal control over the heart is moderate a sense of calm is experienced providing for the physiological requirements of safe social environments. If a threat occurs the vagus can reduce its ‘brake’ on the heart allowing for the greater blood flow required for flight or defence. If the threat becomes unavoidable and may result in death, the immobilisation circuits of the vagus apply a stronger inhibition to the heart, diminishing cardiac output as the victim feigns death, or indeed may die from the action of inhibitory cardiac control.

Neuroception

Neuroception is the term coined by Stephen Porges to describe the way humans assess the environment for risk and act according to information the nervous system receives.

The process operates on a deeper level than mere perception:

“...neuroception takes place in primitive parts of the brain, without our conscious awareness. The detection of a person as safe or dangerous triggers neurobiological determined prosocial or defensive behaviours”.

(Porges, 2004)

This process of neuroception is always at work as we navigate our environment. This monitoring system stimulates unconscious modulations of our nervous systems to find the best means of operating in any given experience. This influx of unconscious information to the nervous system, along with the body’s constant modulation of

nervous and physiological response to adapt, is a vital survival tool for all mammals. When working correctly neuroception protects us from danger by assessing the physical environment for predators, or it can communicate through the social engagement system, feeding information about other humans' intent through facial expression or tone of voice in very subtle ways that may allow us to intuit the degree of danger another person poses. Defects in the operation of neuroception may cause environmental information to be misconstrued by the nervous system resulting in inappropriate nervous and physiological responses, for example the triggering of the fight/flight response when in truth the environment or a social interaction does not warrant such a strong response. Porges explains:

“When the environment is appraised as being safe, the defensive limbic structures are inhibited enabling social engagement and calm visceral states. In contrast, some individuals experience a mismatch and the nervous system appraises the environment as being dangerous, when it is safe. This mismatch results in physiological states that support fight, flight or freeze behaviours but not social engagement behaviours”

(Porges W. S., 2007)

The powerful bodily experience of neuroception means that it is often not possible to engage the cognitive resources of the brain to overcome the physiological response

that neuroception activates. Studies suggest that the brain preferentially responds to emotional stimuli even when the stimuli are not the central focus of attention (Brosch, Grandjean, Sander, & Scherer, 2008). This causes great problems when sympathetic and parasympathetic nervous system responses are engaged in error by neuroception because it may be very challenging to overcome such strong bodily responses and reinstate a sense of calm.

Chapter Three

Application of Polyvagal Theory to Complex PTSD

It has been shown above that complex PTSD has a strong neurological and physiological aspect to it. An understanding of polyvagal theory provides a means to understand and ameliorate the unpleasant and often frightening bodily symptoms that sufferers of complex PTSD endure. With an understanding of polyvagal theory in place it becomes a matter of ethical necessity to apply it to the symptoms and suffering of those who have endured chronic abuse. Often during psychotherapy individuals may find themselves experiencing flashbacks and re-traumatisation and be pitched into the states of hyperarousal or dissociation noted above. This essay argues that it is ethically dubious to put clients through such unpleasant experiences without providing a means to ameliorate such frightening symptoms. Patients are

“...urged to talk about the most painful events of their lives without helping them to modulate their arousal. That is obviously retraumatising. Asking people to relive the most horrendous events of their lives without teaching them how to feel safe and calm is hazardous to people’s health; it is so wrong”

(van der Kolk & Najavits, 2013, p. 521)

A knowledge of the neurophysiological basis of complex PTSD symptomology is essential to provide sufferers with a means to understand and cope with the unsettling symptoms of trauma. Research is providing evidence that polyvagal theory is applicable to many forms of psychological and behavioural issues. Research into the social engagement system's role in autism (Bal, et al., 2010), emotional regulation in borderline personality disorder (Austin , Riniolo, & Porges, 2007) and dissociative experience (Hart, 2013) suggest that that polyvagal theory can be applied very effectively to many disorders and ties many manifestations of mental ill health together under a single suggested neurophysiological mechanism. Polyvagal theory:

“...has provided unique insights into the role of emotion dysregulation in psychopathology, and into the development of aberrant patterns of autonomic nervous system functioning in numerous clinical syndromes that before were considered unrelated”

(Beauchaine, Gatzke-Kopp, & Mead, 2005, p. 181)

Further to its role in psychopathology, polyvagal theory is an optimistic and positive approach to maximise contentment generally in the human population by applying techniques to down regulate the primitive, fear and anxiety inducing old vagal response

and promote the more modern mammalian, social engagement systems that encourage safety and growth in optimal social and community settings (Porges W. S., 2015).

A knowledge of polyvagal theory can be exploited in two ways: the explanatory power of the theory with respect to the physical symptomology of complex PTSD thereby normalising it and providing a means to alter cognitive response for the better and secondly, by attending to interventions that decrease the intensity of unpleasant physical symptoms and promote a sense of control via activation of the inherent calming influence available from the parasympathetic nervous system.

Victim Narratives

The explanatory power of polyvagal theory is rooted in its ability to explain bodily experience with respect to trauma and provide sufferers with a map that explains the hyperarousal, dissociation and anxiety states that are so common in complex PTSD. This understanding makes the experience less personal and helps sufferers instead see the bodily symptoms of trauma as a normal albeit unpleasant adaptive response. Polyvagal theory is capable of accounting for a great many of the physical symptoms of trauma and stress related disease. The sub-diaphragmatic vagus branch that has influence over the viscera and gut is responsible for unpleasant gastric complaints experienced during times of stress while the upper vagal branch that has influence over the heart and lungs is responsible for disconcerting cardiac and breathing sensations. An understanding of these mechanisms may reassure those who suffer, that while the experience is an unpleasant one, it is in fact within the bounds of normal experience given the trauma they have suffered, is not dangerous or harmful despite the unpleasant nature of it and is not a form of weakness on the sufferer's behalf as many of the physiological responses they experience are beyond conscious control. For this reason,

such experiences are frightening and often baffling. By drawing attention to such bodily sensations and explaining the dynamic nature of our physiology a new understanding of bodily experience may emerge and with it a stronger ability to cope. As van der Kolk states, 'we can tolerate a great deal of discomfort as long as we stay conscious of the fact that the body's commotions constantly shift' (van der Kolk B. , 2014, p. 209). This shifting of bodily experience and sensation may account for the myriad somatic problems suffered by victims of complex PTSD outlined above. The older subdiaphragmatic vagus is stimulated during periods of stress, which in turn activates the fight/flight response of the sympathetic nervous system. The fight/flight response is mediated by the release of stress hormones via the hypothalamic-pituitary-adrenal axis (HPA) (Porges S. W., 2001, p. 136) which, if activated in a situation in which there is no true danger can result in disorientating sensual and cognitive experience that generates much fear. The HPA axis model fits well with the hyperarousal experienced by sufferers of complex PTSD, accounting for the anxiety and panic that may become overwhelming. Further to the endocrine activity of HPA axis, activation of the primitive vagus releases the 'vagal brake' discussed above, prompting accelerated heart rate and increasing respiration. The combination of this hormonal and nervous system onslaught leaves victims helpless in the face of overwhelming physiological arousal and provides an explanation for the poor emotional regulation seen in complex PTSD.

The second key bodily experience that troubles complex PTSD sufferers so much is the dissociative states that can be triggered by reminders of past trauma. Polyvagal theory accounts for this experience by activation of the oldest vagal pathway, that of the reptilian vagus responsible for immobilisation and feigning death. In the hierarchical response described by Porges, earlier vagal responses will be induced first providing a

means of defence or escape, however if this is not sufficient, blood flow to the brain is reduced inducing a bodily and cognitive shut down in the face of potential death. Without knowledge of why such a bodily response occurs, victims will despair at ever overcoming such a debilitating experience. Polyvagal theory provides a means to explain this experience to sufferers and re-frame it as a normal bodily response albeit occurring inappropriately because of past trauma. This information provides sufferers with a means to alter the narrative of their experience, seeing it as an unfortunate result of their traumatic experience rather than a defect of character that might exacerbate the poor sense of self described above. In the therapy room an idealised vagal model may be used to explain these processes to clients. This provides sufferers with information to engage their higher brain functions and have a degree of control over the bodily vagal response via the bidirectional nature of vagus nerve communication. This can be particularly useful in overcoming the subconscious activity of neuroception. When a sufferer finds himself pitched into the primitive vagal response, whether hyper arousal or dissociation, an awareness and understanding of bodily sensation provides the cognitive requirements to monitor, maintain and ultimately quell the sympathetic/parasympathetic nervous system activation. An understanding of neuroception is vital for this to work and may be particularly helpful in relationships where intimate partners may trigger memories of trauma through unconscious channels.

A further consideration with respect to sufferer narratives is the way memories are formed during trauma. Usually when a terrifying event is witnessed a very clear memory of the event is etched into memory. The secretion of adrenaline ensures this occurs and the more adrenaline secreted the clearer and longer lasting the memory is (van der Kolk B. , 2014, p. 176). However, this ability to well retain memories only

works up to a critical threshold of adrenaline secretion. This adrenaline secreting phase is reflected in the second neural circuit described in polyvagal theory, the mobilising aspect of vagal action. If the event becomes life threatening the third neural circuit is invoked, reducing blood flow to the brain and preparing the body for dissociation and shut down. This radically alters the way the brain functions and fundamentally changes the way memories are stored. This occurs via alterations to the rational brain, primarily the thalamus and frontal lobes which are inhibited and the emotional brain - the limbic system, which becomes dominant,

“Under normal conditions these two memory systems – rational and emotional – collaborate to produce an integrated response. But high arousal not only changes the balance between them but also disconnects other brain areas necessary for proper storage and integration of incoming information...”

(van der Kolk B. , 2014, p. 176)

The result of this dysregulation in the brain is an inability to form coherent memories and therefore a logical narrative of events. The memories become ‘fragmented sensory and emotional traces’. These memory fragments are the basis for the visual flashbacks experienced in PTSD and the emotional flashbacks in complex PTSD that make emotional regulation so challenging. Understandably such flashbacks are distressing for sufferers but this distress may be ameliorated somewhat if a rational explanation

using polyvagal theory is offered. Such an explanation allows sufferers to establish a new narrative for themselves, empowering them to see such flashbacks in a new and less distressing light. By assiduously attending to and challenging limbic responses with the cognitive power of the higher brain, sufferers can reduce physical symptoms through the bidirectional capacity of the vagal nerve but also change the neural makeup of the brain via neuroplasticity (Doidge, 2007). Distressing and habitual narratives that trap victims in unhelpful ways of being and thought can be altered by attentive and persistent changes in cognition that ultimately result in new, more adaptive neural structures.

Neurophysiological Interventions

The mammalian myelinated vagus circuit provides a means for activation of the social engagement system by silencing the fight/ flight or dissociative responses induced by the primitive vagus circuits. Stimulation of the social engagement system promotes a sense of calm and safety that is achieved in several ways and may be grouped together under the title of ‘limbic system therapy’ with the hope of establishing a balance between the rational and emotional aspects of the brain (van der Kolk B. , 2014, p. 205).

Prosodic Cues and Eye Contact

The myelinated mammalian vagus has influence over the muscles of the head and face including the muscles of the middle ear that are vital for the detection and understanding of human voice during social engagement. The inability of autistic individuals to detect and decipher prosodic cues may be attributed to a malfunction of the social engagement system (Porges S. W., 2003, p. 508). In a similar vein, hypervigilance to angry voices has been demonstrated in Attention Deficit Hyperactivity Disorder (Chronaki, Benikos, Fairchild, & Sonuga-Barke, 2015) This same deficit is present in traumatised

individuals who find themselves living out of the primitive vagal circuits, experiencing fight/flight or dissociative experiences and a shutdown of the social engagement system. The use of calm and soothing tones when treating trauma victims provides a means of stimulating the social engagement system via the muscles of the inner ear and quelling the primitive vagal response. Affective prosody is comprised of emotional and attitudinal elements (Wickens & Perry, 2015). The emotional elements relate to tone of voice while attitudinal elements relate to the attitude of the speaker, which can alter the meaning of the words spoken. From the view point of therapy, it is more important to ensure that prosody and tone are gentle rather than to focus on the content of what is said. Face to face communication is reliant upon many factors, however prosody impacts greatest upon the ability of others to determine emotional state (Regenbogen, et al., 2012). This may prove to be vital in the treatment of complex trauma victims because such individuals exhibit a specific hypervigilance to angry tones of voice, particularly those who experience dissociative symptoms (Nazarov, et al., 2015). This puts these individuals at greater risk of being triggered into a trauma response if the therapist is not very mindful of the prosodic cues being offered.

As mentioned above, the most recently evolved mammalian vagus circuit constituting the social engagement system provides motor control over the muscles of the head including those of the eyelids and inner ear. In the same way that calm can be induced by a pleasant tone of voice, non-threatening eye contact and kind facial expressions can be used to exploit the body's neuroception by providing reassuring cues that the person with whom one is interacting is not a threat. Such reassuring behaviour inhibits the regions of the brain that initiate the fight/flight response (Porges S. W., 2004, p. 20). This neural circuitry is an obvious target for the therapy process where a safe and calm

environment can be provided, thereby calming the primitive vagal response and promoting the activation of the social engagement system which brings with it the opportunity for the forming of safe attachment and good social bonding. This is vital for sufferers of complex PTSD because the interpersonal dimension to the abuse suffered leaves victims with grave problems in establishing relationships and integrating into society. The difficulties with relationships may be looked upon as an attachment disorder, which is an unsurprising outcome of chronic abuse during childhood but there is evidence that insecure attachment can be modified to a healthier form, if interventions occur early enough. This can be attempted via play therapy (Anderson & Gedo, 2013) through exploitation of the neuroception process by providing a safe calm environment with extensive face to face interaction and non-threatening eye contact. In this way, faulty neuroception can be modified for the better by gentle and persistent stimulation of the social engagement system.

Yoga and Mindfulness

The vagus nerve's influence over the sympathetic and parasympathetic nervous system can be exploited by yoga practices that involve specific breathing techniques. The measure of heart rate variability (HRV) is a sensitive means of establishing the imbalance between sympathetic/parasympathetic nervous system response. Such an imbalance is indicative of a stressed or traumatised nervous system manifesting in dysregulation of the HRV (van der Kolk B. , 2014, p. 266). Inhalation stimulates the sympathetic nervous system and briefly increases heart rate while exhalation stimulates the parasympathetic nervous system and briefly decreases heart rate (Van Diest, et al., 2014). This mechanism works via the most recently evolved vagus nerve's influence over cardiac and respiratory output. When an individual is in good psychological and

physical health there is a natural rhythm to the increase and decrease of heart rate however traumatised individuals demonstrate an abnormally low HRV suggesting that sympathetic and parasympathetic nervous systems are out of kilter. This imbalance may go some way to explaining why sufferers of complex PTSD have such difficulty regulating themselves emotionally and physically. Yoga provides a means for sufferers of trauma to improve HRV and gain a better sense of bodily awareness via a combination of poses and breathing techniques. This reduces the hyperarousal aspect of complex PTSD (Mitchell, et al., 2014) and further benefits from such practises extend to improvements in fear, depression, anxiety, isolation and a sense of worthlessness, possibly through neuroplastic means but it appears that poses alone are not enough to provide improvement in HRV and emotional wellbeing (Brown & Gerbarg, 2005b). A possible explanation for this lies in the greater tolerance for carbon dioxide that individuals develop after a period of practising yogic breathing especially breathing that is long and slow in nature. A vagal mechanism is suggested for this involving chemoreceptors sensitive to carbon dioxide levels that are located at the point where the vagus nerve enters the limbic system (Brown & Gernarg, 2005a). Down regulation of vagus stimulation at this point in the limbic system results in a physically and emotionally calming nervous response. An explanatory mechanism for this calming effect may be provided by the correction in the deficient levels of gamma-aminobutyric-acid (GABA) found in traumatised individuals (Streeter, Gerbarg, Saper, Ciraulo, & Brown, 2012). GABA is the major inhibitory neurotransmitter in the central nervous system and is the main target for pharmaceutical based interventions for anxiety and hyperarousal via the administration of benzodiazepine drugs (Trevor & Way, 1992, p. 311). The above study suggests that an increase in the activity of GABA

and the resultant reduction in anxiety and hyperarousal can be achieved by stimulation of the vagus nerve via the practice of yoga.

Mindfulness and meditation practices also provide a means to alter emotional regulation for the better. These improvements are achieved through both heightened awareness and understanding of bodily trauma response and alterations to physiological and biochemical states. For many complex PTSD survivors, their sensory world is not readily available and in fact kept at a distance from conscious awareness (van der Kolk B. , 2014, p. 208). This is hardly surprising given the disturbing hyperarousal and dissociative states experienced in complex PTSD, however this lack of connection with sensory experience makes such conscious states all the more frightening because they are incomprehensible and seemingly not within conscious control of the sufferer. Meditation provides a means for sufferers to become aware of bodily experience and accept the unpleasant sensations in their body as a bearable and transient phenomenon. While this new understanding of bodily experience is of great use to sufferers of complex PTSD, meditation offers further more concrete benefits in the form of biochemical changes that aid calm and relaxation. The well being experienced after a period of meditation may be attributed to the release of mood stabilising neurochemicals such as dopamine, serotonin, and melatonin (Rubia, 2009) and increases in the major inhibitory neurotransmitter GABA mentioned above (Daube & Jakobsche, 2015). Meditation results in an overall dampening of the sympathetic nervous system response providing a quiescence of the limbic system reflected in a shrinking in the size of the amygdala – the fear centre of the brain (Esch, 2014). This manifests behaviourally as an improvement in dealing with stress and better control of emotional states – a vital need for sufferers of complex PTSD.

Conclusion

This essay proposed that complex PTSD is a distinct disorder with its own specific symptomology and treatment requirements, rather than merely an associated aspect of classic PTSD. Further, this essay proposed that Polyvagal Theory provides a powerful means to understand the emotional and physiological aspects of complex PTSD symptomology and offers various means to address these symptoms.

It has been demonstrated that the symptoms of complex PTSD are more extensive and varied than classic PTSD. The formulation for classic PTSD pays scant attention to the hyperarousal and dissociative states found in complex trauma and does not attempt to address the interpersonal and repeated nature of such trauma. This interpersonal aspect sets complex trauma apart and results in the painful distortions to self-concept describe in this essay. While it cannot be denied that it is a challenge to establish complex PTSD as a distinct disorder given the overlap of symptoms with other well established conditions, this essay argues that the bar is set too high for such criteria to be met, particularly with respect to the demands of the Diagnostic and Statistical Manual. This is unfortunate because there are serious consequences for not grasping that complex trauma is a distinct disorder. This is most significant with respect to treatment plans because a lack of understanding of the neurophysiological basis of complex trauma can result in poor client outcomes if the tendency for victims to become emotionally or physiologically hyper-aroused is not considered. For this reason, complex PTSD must be treated as a true and distinct disorder regardless of official recognition in the medical community. The risk of harm to victims is too great to allow the distinct symptoms and

treatment requirements to be over looked and wedged into the existing treatment plans for classic PTSD.

This essay further proposed that Polyvagal Theory provided a means to better understand the causes and symptomology of complex trauma. It was shown that Polyvagal Theory is an elegant theory, drawing upon well-established neurophysiological understanding coupled with an evolutionary aspect that explains the dynamic coping mechanism mammals exploit to cope with threats but also use during times of calm in peaceful social settings. The three vagal neural circuits proposed by Polyvagal Theory account for the adaptive responses during a traumatic episode and provide a framework to explain why the continued triggering of these circuits after the event causes the symptoms of hyper arousal and dissociation seen in victims of complex trauma. It is important that such a sound physiological basis is posited and applied to the symptoms of complex trauma because this adds further weight to the argument that complex PTSD is distinct from classic PTSD. While Polyvagal Theory can be used to aid victims of classic PTSD also, it is more useful in explaining the more troubling and less clearly defined symptoms of complex PTSD. It is this explanatory power that is so vital for sufferers because it offers a means for them to make sense of the unsettling experiences they suffer. This was demonstrated in the strange memory fragments and emotional flashbacks seen in complex PTSD. By providing a reasonable explanation to the sufferer why they struggle with such memory and emotional problems it allows victims to reframe their experience and create a less troubling narrative with respect to the traumatic event and that which came after. Further, this essay proposed that the exploitation of the neurophysiological underpinning of Polyvagal Theory provides a means to dampen strong nervous system responses in victims, offering relief from

distressing symptoms and offering hope of control of seemingly uncontrollable physiological and emotional responses. Such interventions are relatively straightforward such as a kind tone of voice or the maintenance of gentle eye contact during therapy. The other interventions detailed require work on the part of the victim but are not overly arduous and offer the chance to gain some control over their troubling symptoms.

The unclear status of complex PTSD in the medical community and the established therapeutic benefits of the application of Polyvagal Theory pose ethical problems for those who hope to treat sufferers of complex PTSD. Firstly, denying the quite specific symptomology of complex PTSD and placing it under the associated symptoms of classic PTSD puts sufferers of complex PTSD at risk of unsuitable and potentially harmful interventions. Secondly, if a practitioner is familiar with and accepting of the complex PTSD construct but does not have the knowledge or skills to aid sufferers with the potentially strong emotional responses that traditional talk therapies may invoke, this essay proposes that such a practitioner is remiss and on ethically shaky ground. All practitioners hoping to aid sufferers of complex PTSD must appreciate the specific symptoms such prolonged trauma presents with and provide interventions to limit the detrimental effect of such symptoms. Polyvagal Theory provides a well-researched and effective means to do precisely this.

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