

**The Integration of Equine-Facilitated and Somatic Therapies for the Treatment of
Complex Trauma**

By

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Abstract

Current research on early trauma is uncovering the staggering toll it takes on physical, psychological, social, and emotional health. Neurobiology and trauma research also suggest that accessing the portion of the brain and nervous system that humans have in common with animals is the key to healing. In order to access these lower regions of the brain which are outside of conscious awareness and control, a bottom-up approach is recommended. A focus on interpersonal neurobiology, somatic psychology, attachment theory, and self-regulation with the goal to create neural pathways of safety and connection are all well-suited to the experiential work of equine-facilitated psychotherapy. This thesis seeks to explore the nature of equine-facilitated psychotherapy in the context of its potential to be a useful adjunct intervention to somatic therapy in the treatment of complex trauma. This is done by examining some of the core concepts in somatic therapy such as hierarchical levels of information processing, attending to the internal senses, and present moment focus as they may be utilized in work with equines. An introduction to the concept of the window of tolerance and polyvagal theory provide a structure and language useful for expressing the range in the autonomic nervous system that is correlated to well-being and an experience of safety. Through the lens of somatic therapy, this thesis then expands to describe the use of equine-facilitated practices aimed to enhance the felt sense of increased capacity for self-regulation, one of the primary tenets of treatment for complex trauma.

Keywords: complex trauma, developmental trauma, equine-facilitated psychotherapy, somatic therapy, window of tolerance, polyvagal theory

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Dedication

My first social work job was at the Victoria Youth Custody Centre, where I spent a decade helping youth transition from life in custody to life back in their communities. During this time, I learned so much about the impact of early trauma, the harm of pathologizing pain, as well as our innate capacity for resilience and the importance of caring relationships. I dedicate this thesis to all the amazing kids who shared their stories with me. I have carried them around with me, trying to make sense of them so maybe one day I could help to change the lens a little bit.

When an animal is kept in conditions well outside the limits of what it would meet naturally, its innate motivation may be permanently thwarted; appropriate learning situations may not arise, or rather inappropriate behaviour may be fortuitously reinforced. Stress, the result of being asked for more adjustment than the animal can make, alters its hormones and neurotransmitters, making it particularly prone to obsessive behaviour and inability to learn. Any of these factors, or a combination of them, can give rise to aberrant behaviour; behaviour that is neither adaptive in the circumstances in which the animal finds itself nor seen in wild or feral animals.

-Lucy Rees, ethologist

From Horses in Company

Table of Contents

ABSTRACT.....	2
ACKNOWLEDGEMENTS.....	3
DEDICATION.....	4
CHAPTER ONE: INTRODUCTION.....	9
Problem Statement.....	10
Definition of Key Terms.....	11
The Neuropsychological Impact of Trauma.....	12
A Bottom-Up Approach to Complex Trauma.....	14
A Phased Approach to Healing Trauma.....	16
The Lens of Polyvagal Theory.....	17
Nature of the Study.....	18
Assumptions, Limitations, Scope.....	18
Scholarly Context.....	20
Moving Beyond a Diagnosis of PTSD.....	21
Self-Regulation as a Core Concept.....	23
The Role of Equines in Mental Health Interventions.....	25
Equine-Assisted Therapies.....	29
Ethical Consideration.....	32
Summary.....	33
CHAPTER TWO: LITERATURE REVIEW.....	35
Development of the Concept of Complex Trauma.....	36
Unique Characteristics of Developmental Trauma.....	37

The Need for a Phased Approach.....	39
Equine-Facilitated Therapies for Trauma.....	42
Equine-Facilitated Therapy for Complex Trauma (EFT-CT).....	43
Equine-Facilitated Cognitive Processing Therapy (EF-CPT).....	43
Equine Partnering Naturally.....	45
Professional Association of Therapeutic Horsemanship.....	47
Body-Oriented Psychotherapy.....	48
Common Factors in EFP Literature.....	49
Principles from Attachment Theory.....	50
Benefits of a Non-Traditional Setting.....	52
Experiencing Safety.....	53
Inviting Physical Contact.....	55
Application of Self-Regulation Strategies.....	56
A Sense of Mastery.....	59
Limitations of Existing Studies on EFP.....	60
CHAPTER THREE: CORE CONCEPTS OF SOMATIC THERAPY.....	61
History and Development of Somatic Therapy.....	61
Core Concepts of Somatic Therapy.....	63
Hierarchical Information Processing.....	64
Internal Senses.....	66
Body Awareness.....	67
Present Moment Focus.....	69
Fight, Flight, and Freeze Responses.....	70

The Window of Tolerance.....	72
Polyvagal Theory.....	74
Introduction and Relevance.....	74
History and Development.....	76
Organizing Principles.....	77
Limits and Contraindications.....	80
Summary.....	81
CHAPTER FOUR: SOMATICALLY BASED EFP.....	84
Core Concepts.....	84
Creating a Container.....	84
Body Awareness.....	84
Grounding.....	86
Present Moment Focus.....	86
Embodying Resources.....	87
Emotional Congruence.....	88
Shifting Focus.....	89
Window of Tolerance.....	89
Interrupting Stories.....	90
Avoiding Pathology.....	91
Staying Out of the Way.....	91
Reflective/Active/Experiential Sessions.....	92
Strategies for Conducting EFP Sessions.....	93
Structuring a Session.....	93

Meet the Herd.....94

Grooming Sessions.....95

Approach/Retreat.....96

Boundary Experiences.....97

Active Roundpenning.....98

Play.....99

Summary.....100

REFERENCES.....101

Chapter 1 - Introduction

In dreams, mythical stories, and lore, one universal symbol for the human body and its instinctual nature is the horse

Levine (2010, p.66)

We have entered an era where it is understood that trauma is more than an experience that occurred in the past; it is also the imprint left by that experience on the mind, brain, and body (van der Kolk, 2014). Therapists are becoming more aware that these imprints of traumatic experiences are held deep in the primitive brain, which limits the access of traditional cognitive approaches to healing (Porges, 2011). van der Kolk (2014) contended that "we have discovered that helping victims of trauma find the words to describe what has happened to them is profoundly meaningful, but usually it is not enough" (p. 21). When attempting to understand why this is so, it is essential to understand that it is the left hemisphere of the brain that thinks in language and dominates verbal communication skills (Siegel, 1999). Schore (2011) explained that it is the right hemisphere of the brain which is responsible for implicit emotional and body processing that rules human behavior. Since verbal language cannot be relied upon to fully describe the multifaceted language of the body with "a lifetime of joys, sorrows, and challenges, revealed in patterns of tension, movement, gesture, posture, breath, rhythm, prosody, facial expression, sensation, physiological arousal, gait, and other action sequences" (Ogden & Fisher, 2015, p. 25) it follows that an exclusive reliance on talk therapy can place limits on clinical efficacy.

Many of the conditions that foster well-being of the more primitive and right brain operations can be accessed with the assistance of horses (Marshall & Pelletier, 2013). The

horse's ability to instinctually rebound from threat can serve as a powerful model for humans of the capacity of all mammals innate and biological healing processes. Horses can be formidable allies in experiences that initiate integration between cognition, emotion and the body while updating the nervous system to respond to present conditions (Siegel, 2010). This alliance is in part due to the horse's capability to exist in the moment and remain powerful and strong despite possible threats to their lives and well-being. Peter Levine's (1997) contributions to resolving traumatic symptoms explain that the key to healing trauma can be found by studying and mirroring the behaviour of animals and how they avoid traumatization by accessing their survival responses. Non-human mammals are governed by the primitive, instinctual parts of their brains and nervous systems that are not under conscious control and, therefore, not susceptible to the influence of the intricate workings of the cortex or "thinking brain." The human tendency to rely on cognitive functioning in order to remain in control and behave in a socially appropriate manner can hinder the ability to release trauma from the body. Current research on neurobiology and trauma suggests that accessing the portion of the brain and nervous system that humans have in common with animals is the key to healing trauma (Ogden & Fisher 2015; Porges, 2011; van der Kolk, 2005; Dana, 2018).

Problem Statement

There is a scarcity of empirical studies in the field of equine-facilitated therapeutic interventions, coupled with a lack of a unified framework and theoretical underpinning for incorporating horses in therapy (Bachi, 2012; Hallberg, 2018). The use of equine-facilitated psychotherapy (EFP) for the treatment of complex trauma is supported by only a small number of studies, mostly with youth and often through the lens of therapeutic riding (Lentini & Knox, 2015). Nevertheless, an internet search produces many programs available using horses to heal

post-traumatic stress disorder (PTSD). As equine-facilitated interventions for the treatment of mental health issues continue to expand into mainstream consciousness, the scarcity of empirical studies and the lack of a standardized approach and terminology is a genuine concern (Dunning, 2017; Hallberg, 2018). As with the early stages of all counselling interventions, the literature available is largely based on anecdotal accounts, case studies and observations (Hallberg, 2018; Trotter, 2012). Dunning (2017) captured this concern when she stated:

we are playing catch up to a field that has taken flight without a flight plan. If this field is to find a sustainable and long-term mode of operation that will firmly lodge the methods into the realms of treatment and education, we must slow down and become educated about what we are doing (p. 2-3).

Adding to the knowledge of what is being practiced in the field of EFP will allow the industry to learn and grow from the work that is already being done. The goal is to establish a credible base of knowledge to ensure that appropriate studies can be conducted to determine the efficacy of somatic psychologies coupled with EFP. This information may also be useful to referral agencies and insurance companies, who are coming to realize the power of EFP in this area.

Definition of Key Terms

To ensure consistency and clarity, the following operational definitions are provided as they are understood by this researcher.

equine: Any member of the horse family. Can include horses, donkeys, and zebras. In this context "equine" and "horse" are used interchangeably as most equine-facilitated therapy and

research is done on horses. There are donkeys and zebras involved in the equine-assisted therapy community, however.

equine-facilitated psychotherapy (EFP): An approach to equine-assisted mental health in which a licensed mental health professional views the horses as a sentient co-facilitator. Approach is generally in-depth and insight oriented.

developmental trauma: the experience of multiple, chronic, and prolonged, developmentally adverse traumatic events, most often of an interpersonal nature (e.g. sexual or physical abuse, war, community violence) and early-life onset. These exposures often occur within the child's caregiving system and include physical, emotional, and educational neglect and child maltreatment beginning in early childhood. *The author uses developmental trauma, early complex trauma and complex trauma interchangeably as different sources will utilize these terms.*

The Neuropsychological Impact of Trauma

There is a growing body of research focused on the autonomic nervous system (ANS), interpersonal biology, attachment and regulation strategies to create pathways of safety and connection which are seen as a natural fit for the experiential work done with horses (Dana, 2018; Levine, 2010; Porges, 2011; van der Kolk, 2014). Proponents of these methodologies suggest that somatic psychologies are easily adapted to provide a theoretical base for equine assisted interventions (Marshall & Pelletier, 2013; Schlote, 2018). At the root of all somatic approaches is establishing a focus on the body and an interest in how the body carries the legacy of trauma (Levine, 2010; Ogden & Fisher, 2015).

As neuroscience impacts perspectives on biological functioning and makes its way into clinical applications, there is also new research aimed at exploring and understanding the staggering toll that early trauma takes on our physical, psychological, social and emotional health (Kain & Terrell, 2018). Van der Kolk (2005) summarized the concept of "early," "complex," or "developmental" trauma as:

the experience of multiple, chronic, and prolonged, developmentally adverse traumatic events, most often of an interpersonal nature (e.g. sexual or physical abuse, war, community violence) and early-life onset. These exposures often occur within the child's caregiving system and include physical, emotional, and educational neglect and child maltreatment beginning in early childhood (p. 402).

A commonality of this population is a pervasive sense of being stuck in survival physiology and struggling with the activities of daily living. People with trauma histories often report experiencing more intense and extreme autonomic responses, which hinders their ability for regulation and decreases their opportunity of experiencing feelings of safety in relationships (Dana, 2018). Early trauma can compromise a person's ability to engage with others in a meaningful way by replacing patterns of connection with patterns of protection (Dana 2018; Porges, 2011). These early survival responses can become habitual patterns of daily life and impact well-being throughout the life span. Early trauma is, therefore, not just about *what did happen*; it is also about *what did not happen*; the typical developmental trajectory that is expected to occur during our formative years (Schmelzer, 2018).

A Bottom-Up Approach to Complex Trauma

A client's verbal narrative is not seen as sufficient in accessing the experiences contained in the body, as often "the body reflects and sustains implicit processes shaped in the brain and body even before the acquisition of language" (Ogden & Fisher, 2015, p. 13). The inner truth of traumatic experiences can be extremely difficult to organize into a coherent narrative with a beginning, middle and end. It is common for memories to arrive as fragmented images, physical sensations and intense emotions that are impossible to articulate (Herman, 1992). van der Kolk (2014) indicated that most survivors rely on what can be called a "cover story" (p. 43), which offers their best cognitive version of the experience that in some ways explains their symptoms and behaviours but limits real understanding of the visceral experience.

Trauma survivors have an altered nervous system that can often "misfire" and have difficulty evaluating risk and safety. "Neuroception" is the word used to describe the capacity to evaluate relative danger and safety in one's environment (Porges, 2011). Faulty neuroception makes it difficult for people to experience relaxation, reciprocity, and safety. From a neurobiologically informed perspective, establishing safety begins by focusing on control of the body and then moves upwards and outward and to the cognitive and environmental realms. Trauma survivors can feel very unsafe in their bodies. The overwhelming experiences are often fragmented, frightening somatic sensations that appear to lack rules or reasoning in how, why, and when they appear. People often cannot understand why they respond to small frustrations as though they were being annihilated. Before attending to any other concern, restoration of basic biological patterns in eating, sleeping, and reducing hyper and hypo arousal symptoms must be addressed (Fisher, 2017; Herman, 1992; van der Kolk, 2014). These types of approaches are often referred to as *bottom-up* approaches, as they are developed to work through the body to

change the brain, specifically the lower, subcortical areas of the brain outside of conscious awareness and control (Sweeton, 2019).

Bottom-up, body-based techniques work well for targeting change in specific areas of the brain, such as the amygdala, the insula, and the hippocampus. The goal is to retrain the brain and body and reduce the stress response in the autonomic nervous system, which will result in a decrease in hypervigilance. Brains that once learned that certain actions and behaviours were dangerous are conservative in taking risks that similar ones may now be safe. This process is governed by the amygdala, which is the fear center of the brain. The legacy of trauma and attachment inadequacies often lead to the amygdala being in a constant state of alarm. When this occurs, individuals operate in a type of continuous survival mode characterized by bouts of hyper and hypo arousal, rarely finding nervous system homeostasis. Existence in these physiological states may have at one time served a vital survival function, in that it may have helped to keep them safe from or minimize harm by staying either alert or by shutting down physically and psychologically. However, they also have the impact of impeding growth and development from being able to occur (Dana, 2018).

Another goal of bottom-up approaches is to regulate the insula. The insula relays messages from the viscera to the emotional centers that, in turn, coordinate conscious emotions and cognitive processes. This regulation can improve interoception and result in less likelihood of the nervous system responding with reactivity and dissociation.

The hippocampus can also be targeted, resulting in increased ability to calm fear responses and remain in the present moment. As he referenced a neuroimaging study done in

2004, van der Kolk (2014) provided an example of what dysregulation in these areas due to chronic early trauma can look like:

The contrast with the scans of the eighteen chronic PTSD patients with severe early-life trauma was startling. There was almost no activation of any of the self-sensing areas of the brain.... The only area that showed a slight activation was the posterior cingulate, which is responsible for basic orientation in space. (p. 93)

This information explains why it is so important to target the brain where the processes of dysregulation are shaped. Generally, the trauma therapist's job is to "create in the therapy hour a neurobiologically regulating environment that enables the client's nervous system to experience greater safety and therefore an expanded capacity for tolerating both past and present experience" (Ogden et al., 2006 p. 247).

A Phased Approach to Healing Trauma

Therapy with clients who have suffered trauma requires a staged approach. A phase-oriented model originated with Pierre Janet in 1898, and versions of it are still followed today (Herman, 1992; Ogden & Fisher, 2015; van der Kolk, McFarlane & van der Hart, 1996). Herman's (1992) seminal work, *Trauma and Recovery*, outlines a tri-phasic model of trauma treatment, suggesting that the preliminary focus of all treatment be on creating safety, both internally and externally, before moving ahead with other therapeutic interventions. She highlighted the importance of working in the proper order, from the bottom up, in stages, with the recognition that a foundation of safety, stabilization, resource development and subcortical regulation be established before doing deeper or more complex work. Over twenty-five years later, this model is still the standard of care for complex trauma (Ogden & Fisher, 2015;

Schwartz, 2018). Some equine-facilitated psychotherapy models have begun to incorporate themes of a unified theoretical underpinning and methodology in line with Herman's (1992) trauma treatment model (Kirby, 2016; Marshall & Pelletier, 2013; Shambo, 2013), Ogden's Sensorimotor Psychotherapy (Ogden & Fisher, 2015; Schlote, 2018) and Porges's (2011) polyvagal theory, despite a lack of evidence-based research to support the integration of these interventions.

The Lens of Polyvagal Theory

Polyvagal Theory provides a neurophysiological framework to theorize the reasons why humans (and other mammals) act the way they do. It was named for the vagus nerve, the tenth cranial nerve and the longest nerve in the body, running from the brainstem and going into many of the organs. Essentially, it is the conduit that tells the brain the state of our body. The vagus nerve provides information to integrate thoughts, feelings, bodily sensations, and logic. Once there is neural integration, flow can be established, and the nervous system and body can find homeostatic balance (Porges, 2011). Neural integration can be defined as the linkages between differentiated components of a system and the core mechanism in the cultivation of well-being (Siegel, 2010). The polyvagal lens suggests that actions are automatic and adaptive, generated below the level of conscious awareness (Dana, 2018). Cognitive, top-down, processing is not occurring when autonomic energies are working in the interest of protection. The central tenet of the ANS is that every response is an adaptive survival response (Porges, 2011). The ANS does not make judgements of "good" or "bad"; it merely acts to manage risk and seek safety (Rosenberg, 2017). The shift in a nervous system from sensing "safety" to sensing "threat" can be almost imperceptible. Often what appears as "bad" behaviour in humans and horses is a nervous system response to danger (Schlote, 2019). Polyvagal theory has the potential to be a

useful adjunctive framework for equine-facilitated interventions and trauma recovery primarily because of the horse's natural heavy reliance on somatic information.

Nature of the Study

This literature review and critical analysis seek to explore the nature of EFP in the context of its potential to be a useful intervention in the treatment of complex trauma. The goal of the review is to highlight principles of EFP work that can be integrated with evidence-based somatic treatments for complex trauma, specifically related to the regulation of the autonomic nervous system. Polyvagal theory will be proposed as a useful adjunctive framework that can assist those with trauma histories to reshape their autonomic nervous systems for safety and healthy connection. The exploratory nature of the study will allow for themes to arise and provide a more detailed description of the role horses play in clinical trauma work. The final research analysis will provide recommendations for use in the clinical practice of EFP.

Assumptions, Limitations, Scope

Working from a body-centred approach in treating trauma in EFP requires a belief that traumatic symptoms are not caused by the event itself. Instead, the symptoms are a result of the residual energy becoming trapped in our bodies (Levine, 2010). The activation of this energy may lead to symptoms such as anxiety, depression, and psychosomatic and behavioural problems (Marshall & Pelletier, 2013). Proponents of somatic therapies believe there are strategies that can assist people in moving beyond surviving. As Bromberg (2011) explained:

Through their anticipatory protective system, people are able to more or less survive.

However, many are also more or less unable to live because full involvement in ongoing

life is drained of meaning by the affective residue of developmental trauma that in adulthood serves as a perpetual reminder that stability of self cannot be taken for granted and requires that life be managed with vigilance rather than lived with spontaneity (p. 276).

The power of working with horses is in their ability to notice information that the human therapist may miss and create natural opportunities to access and reshape our nervous systems. These changes can shift us from being in protective trauma states to present moment connecting states. Using experiential methods can teach our bodies to integrate new patterns with the goal of working towards translating new ways of being into other parts of life. In his book *Horsemanship Through Life* (2005), Mark Rashid pronounces "what you do in life; you will do with your horses".

Equine assisted interventions are still in an uncovering and investigatory period of development, and empirical studies are not available at this time to provide the evidence base required by many to be considered a substantial theoretical basis to practice from. The scientific gold standard of clinical research is the randomized controlled trial where identical treatments are compared with a placebo or another treatment for the same condition. Psychotherapy is exceptionally challenging to standardize. Equine-assisted therapy more so. Cost, access to appropriate farm settings and safe and reliable horses are often a hurdle that makes large-scale studies onerous to fund and complete. The lack of standardization in terminology and in the application of clinical practices, greatly affects the ability to operationalize and measure outcomes in a meaningful way. The goal of this thesis is to move the connection of ideas closer together and toward further research in this area, with the eventual goal of researchers conducting such empirical studies. For now, there is a necessity to draw not just from published

academic research but also from non-academic sources, case studies and anecdotal accounts due to the limited amount of available information tying together the practice of EFP and concepts from somatic psychologies.

Scholarly Context

Complex trauma can impact people in numerous, nuanced ways. Frequently they report higher incidences of anxiety, depression, chronic pain, dissociative states, hypervigilance, somatization, shame, and poor self-esteem (van der Kolk, 2014). It is also common to report difficulty attending to their inner sensations and perceptions as well as trouble accurately reading the nonverbal and emotional cues of others. (van der Kolk, 2005). Unresolved traumatic stress can overload the capacity of one's mind, body, emotions, and relationships (Kain & Terrell, 2018). Often this overwhelming state is managed with several destructive, but well-intentioned, coping strategies intended to approximate affect and emotional regulation that was not developed or was disrupted during early developmental stages (Perry, 2006).

A large-scale study on adverse childhood experiences was published in 1998, known as the ACE Study, which began to open up the conversation of the topic of the long-term impacts of childhood trauma by merely having respondents answer yes or no to ten questions regarding their childhood experiences (Felitti et al., 1998). However, in the client's current context, the actual source of developmental trauma can be considered less important than *how* the trauma manifests in an individual's everyday life (van der Kolk, 2014). Understanding the current situational manifestations of complex trauma can be challenging as many adults have developed excellent techniques to manage physiological, somatic, and psychological symptoms. Regardless of the type of adverse experience, the impacts can be significantly life-altering. Anxiety, depression,

suicidality, addictions, disordered eating, chronic shame, sexual and relationship issues as well as complex physical health conditions can all be correlated to early trauma histories (Felitti et al., 1998; Schlote, 2019; Schwartz, 2020). Care that addresses all aspects of mind and body health has been theorized as most effective (Kane & Terrell, 2018).

Moving Beyond a Diagnosis of PTSD

The diagnosis PTSD does not account for the long-term impacts on development that exposure to childhood trauma is known to impart. Due to the developmental delays across a broad spectrum of language, cognitive, motor and socialization skills that are a side effect of trauma, those suffering from childhood trauma often display very complex disturbances with a myriad of varying presentations (van der Kolk, 2005). However, because there are no other diagnostic frameworks that explain the pervasive impact of complex trauma, children and adults are often given a range of "comorbid" diagnoses, which appear to exist independently from the symptoms of trauma. When these fundamental disturbances are not understood as originating from trauma, the picture that is painted is that of unrelated conditions that are likely to be treated individually, and proper interventions are not provided (Schmelzer, 2018).

The symptoms of early complex trauma most often develop from prolonged exposure to multiple forms of interpersonal trauma in childhood by caregivers expected to provide safety, predictability, and stability. Recent research suggests that trauma, which begins in early childhood and adolescence, is unique in its profound impact on adaptation patterns, changes in attachment, sense of self and interpersonal relationships (Luxenberg, Spinazzola & van der Kolk, 2001). Typically, as a young person, there is no means to physically escape the abuse, so victims

must resort to psychological and physiological means that attempt to approximate feelings of safety.

Once children reach adulthood and are more likely to locate physical safety, they have so many years of childhood feeling unsafe that their physiology is primed for protection more than connection. In this survival physiology, both the inner and outer worlds are hyper-tuned to be on guard for signs of danger and threats to safety. Neuroception, or perception of safety, is profoundly undermined in this state and becomes an unreliable source of information. These physiological responses that are hallmarks of early trauma are manifested in the array of physical and behavioural symptoms associated with high ACE scores (Felitti et al., 1998; van der Kolk, 2014; Kain & Terrell, 2018).

Clinicians have advocated for developing more precise terminology to articulate the complexity of symptoms related to various forms of trauma. It is now more often viewed as existing on a continuum and is even referred to as "trauma spectrum disorder" or "post-traumatic spectrum disorder" in some literature instead of the simplified term of PTSD (Kain & Terrell, 2018). The field of traumatic stress has adopted the term "complex trauma" to describe the experience of adverse traumatic events of a chronic interpersonal nature with early-life onset. Proponents of the use of the terms "complex" and "developmental" trauma claim that they were "intentionally designed to capture the intertwined relationship between adverse caregiving and victimization experiences and subsequent survival-based adaptations that alter normative developmental trajectories across the lifespan" (Naste et al., 2017, p. ,289). This shift in language is believed to provide a richer understanding of the multiple clinical features of trauma and a more informed treatment protocol.

Self-Regulation as a Core Concept

In recent years, self-regulation has become an essential construct in the field of neuroscience and in the clinical practice of treating complex trauma symptoms (Heller, 2012). Self-regulation is a learned process used to describe "the ability to manage our emotional state, to calm ourselves during times of heightened emotion – when we become fearful, deeply sad, angry, or frustrated" (Kain & Terrell, 2018, p. 20). A state of dysregulation occurs when we are unable to manage the intensity of positive and negative emotions. We now know that one of the most substantial impacts of early traumatic experiences is the resulting lack of capacity for emotional and autonomic self-regulation (van der Kolk, 2014). This lack means the body's ability to regulate foundational processes such as breathing, heart rate, blood pressure, digestion and sleep is compromised, as well as the ability to regulate emotions (Heller, 2012; Haskell, 2003). van der Kolk (2005) states that "at the core of traumatic stress is a breakdown in the capacity to regulate internal states" (p. 403). When the ability to move toward internal regulation is thwarted, it becomes impossible to process the environment and distinguish between real and perceived threats, develop impulse and self-control, and develop resilience. This loss of, or failure to develop, regulatory capacity is the core of the loss of compromised functioning of many physiological, behavioural and social processes.

Healthy bonding and attachment to caregivers is the groundwork on which neurological programs of safety and regulation are built. In attachment theory, it is well documented that shaping an infant's ability to regulate begins with the co-regulation process between infant and caregiver (Bowlby, 1969). The process of co-regulation occurs when a parent or caregiver successfully soothes the baby, effectively regulating the baby's nervous system and building the infant's capacity for self-regulation (Schwartz, 2020). This ability to move toward internal

regulation is a critical task in development (Schoore, 2001). Resilience research indicates that healthy bonding, access to caregivers who co-regulate and the eventual shift to internal regulation are protective factors from traumatic stress (Kain & Terrell, 2018). van der Kolk (2014) paints a picture of pervasive chronic dysregulation when he states:

Having a biological system that keeps pumping out stress hormones to deal with real or imagined threats leads to physical problems: sleep disturbances, headaches, unexplained pain, oversensitivity to touch or sound. Being so agitated or shut down keeps them from being able to focus their attention and concentration (p. 160).

Often other developmental milestones are not met, and healthy functioning becomes impossible. Summarized by Kain & Terrell (2018), "when the early foundation is wobbly, everything built on top of it becomes unstable" (p. 79).

The need to feel regulated is crucial to physical and psychological well-being, and all mammals will seek it out in any way possible. If a healthy internal locus of control cannot mediate the pervasive distress cycle, then other ways to neutralize unwanted sensory experiences are sought. This false feeling of control can come from substance misuse, disordered eating, and numerous other addictions and maladaptive behaviours, all with the goal of creating homeostasis within the autonomic nervous system (van der Kolk, 2014; Haskell, 2003). These "defensive accommodations" (Kain & Terrell, 2018) or self-protective responses have helped those suffering from dysregulation to survive and are often beneficial strategies in the short-term but tend to increase allostatic load and have long-term negative impacts on health.

The Role of Equines in Mental Health Interventions

The development of EFP has been an extension of the healing bond that can develop between animals and humans. Historically, there is a propensity for humans to be drawn to horses. Sources suggest horses were considered therapeutic for humans dating back to ancient Greek civilization (Bachi et al., 2011; Burgon, 2011). There is also evidence that Hippocrates believed riding horses was healing, and it was recommended to address mental, physical, and emotional issues (Granados & Agis, 2011). During the First World War, British soldiers were reportedly paired with cavalry horses for rehabilitation (Hallberg, 2018). Around 1969, the concept of horses as being therapeutic to humans made its way to North America (Granados & Agis, 2011). Since then, thousands of therapy practices that include horses have been established in over 50 countries throughout the world (Hallberg, 2018).

While there is clear historical evidence that horses have been healing agents for humans for centuries, there are still many unanswered questions regarding their actual influence as a determining factor in the change process (Hallberg, 2018; Trotter, 2012). Research on animal-assisted therapy has identified the impact on humans these interventions tend to offer for healing, learning, stimulation, curiosity, and attachment (Trotter, 2012). However, the question of the actual mechanisms responsible for therapeutic benefits is not as clear (Kruger & Serpell, 2006). Theories tend to center around the notion that horses (and animals in general) possess unique qualities that can facilitate and contribute to the therapeutic process and that developing a working relationship with a horse can lead to positive changes in cognition and behaviour through the acquisition of new skills and the acceptance of personal agency and responsibility (Bachi, 2012; Kruger & Serpell, 2006; Trotter, 2012). However, most of the information on equine ethological characteristics that appear to play a role in therapeutic outcomes is anecdotal.

This lack of empirical research is valid for all animal-assisted therapies. Proponents of animal-assisted therapies suggest that certain theories appear correct and should be considered as frameworks for future study (Hallberg, 2018; Kruger & Serpell, 2006). At present, there are strides being taken to support future studies in this area. For example, the recent groundbreaking of the Temple Grandin Equine Centre at the University of Colorado, expected to open in 2021, will focus attention on the integration of research and education in order to promote evidence-based practices of equine-assisted activities and therapies (Colorado State University, 2020).

As the effort to understand and integrate animal wisdom continues, there are many widely accepted beliefs about horses' beauty, intelligence, sensitivity, and strength that exist in contemporary literature, which still need researching. Some anecdotal evidence suggests that humans look to prey animals for evidence of safety (Stewart, 2017). Prey animals, such as horses, are very attuned to threats in their environment in order to remain safe. If the animal is distressed, humans may unconsciously orient to possible danger in accordance with the nonverbal information the animal is providing. Conversely, humans can be soothed by a calm animal, and trust that the animal can also predict danger in ways that incorporate the limbic system more than a human's heavy reliance on cognition allows for. Other explanations are also plausible, such as the animal being an external stimulus which concentrates the attention away from internal sensors (Serpell, 2004). The response of calming may also be influenced by past experiences and cultural factors. The presence of horses may induce calm in some people in some contexts, but the possibility exists for other explanations. Just the farm milieu in which equine-assisted therapy is hosted may be a calming factor.

The bond that can develop between horses and humans may also be part of their therapeutic value (Hallberg, 2018). The human-animal bond has been postulated to promote

wellness and prevent illness (Chandler, 2005). Stewart (2017) explained that connecting with animals triggers a release of oxytocin in humans, a hormone that plays a role in social bonding. This oxytocin boost increases human's ability to connect and engage with others. In addition, the social support that animals provide to humans, such as love and acceptance, which is not dependent on appearance, social, or economic status, often fills a void for people or can mitigate the complex, confusing and sometimes painful experiences of human relationships (Hirschman, 1994).

Bachi (2013) suggests that attachment theory may offer insights into the formation of strong relationships between humans and equines. The ability to form a healthy attachment that is less threatening than with another human may be a large part of the initial draw for some clients. Perry (2006) states that "beginning the recovery process for relational neglect can start with animals" (p. 38). Anecdotal evidence strongly suggests that a sense of trust and safety can develop between a horse and a human who struggles with relational attunement as a precursor to change in human relationships (Schlote, 2019).

Not only is it the non-judgmental regard that draws humans to horses, but also the sense that they provide a unique and often opposing existential perspective. While humans predominantly rely on cognitive and verbal capacities and tend to ignore or cover up physical cues, horses primarily rely on their primitive, intuitive, and somatic capacities and awareness of their own and others' non-verbal communication. Horses are also spontaneous and instinctual in their movements, unlike humans who frequently are responding to premeditated thought or ambivalent emotional states. From the moment humans enter the horse's vicinity, the horse is providing information on the human's emotional energy and physical state (Dunning, 2017). As prey animals, horses need to be highly attuned to their external environment in order to stay safe,

so their ability to assess safety and intention is integral to survival. This means that they can notice information that the human therapists may miss and create natural opportunities for healing. They have been referred to as mirrors, in that their responses reflect back to humans the information their senses provide, which the human may not be consciously aware of (Hallberg 2018; Marshall & Pelletier, 2013; Trotter, 2012). Irwin (2013) suggests that horses are used in mental health settings because they are more effective than people at confronting attitudes and behaviours due to their honesty and ability to observe and respond to non-verbal communication. This natural openness allows them to be responsive to the body language, emotional state, energy, and intention of all those around them. Their ability to "read" the states of humans can be effective in bypassing the cognitive regions of our brains and activating the amygdala and the limbic system areas that we share with horses. This experiential method can help pave the way to create new response patterns instead of falling back into the habitual fight, flight, and freeze responses (Kohanov, 2013).

The difference in how horses and humans respond to the commonality of the experience of being prey may be the key to what can be done to resolve trauma. Horses are the prey of natural predators in the wild, and they also experience trauma at the hands of humans and in domesticated settings through many training approaches that focus on fear and submission (Irwin, 2013). The impact of being prey or victims of adverse experiences for both humans and equines are similar from a neurobiological, behavioural and relational standpoint. However, the reactions are often different (Levine, 2010). Because the instinctual and involuntary parts of the human brain and nervous system are nearly indistinguishable from horses and other mammals, humans have the ability to react similarly to animals to resolve traumatic symptoms. When perceived life-threatening events occur, these are the parts that are activated. The different reality

is that the rational human brain tends to override instinctive impulses in these situations. Levine (2010) postulates that this has been a necessary adaptation on the part of humans:

Lacking both the swiftness of an impala and the lethal fangs and claws of a stalking cheetah, our human brains often second guess our ability to take life-preserving actions. This uncertainty has made us particularly vulnerable to the powerful effects of trauma. Animals like the agile, darting impala know they are prey and are intimate with their survival resources. They sense what they need to do, and they do it (p. 18).

The problem, according to Levine (2010), is that humans do not allow for an outlet to discharge this compressed residual energy. He compares it to fully engaging the accelerator in a car while simultaneously stomping on the brake, stating that this "tornado of energy is the focal point out of which form the symptoms of traumatic stress" (p. 20). Levine postulates that this residual energy does not just dissipate on its own. It persists in the body and often forces the formation of a wide variety of symptoms such as anxiety, depression, and psychosomatic and behavioural problems as the bodies way of containing the energy. Levine's theory is discussed further in chapter three, along with somatic therapies that expand on the concepts illustrated above incorporated into EFP.

Equine-Assisted Therapies

Equine-assisted therapy is, in its broadest definition, any type of therapy or treatment that includes equine interactions, activities, or treatment strategies, and the equine milieu (Hallberg, 2018). It is an increasingly popular choice for people seeking assistance for a wide range of mental health issues. This form of experiential therapy is provided by a licensed mental health professional in a farm milieu where the horses are incorporated to facilitate therapeutic change.

Sessions involve clients working with a horse or group of horses with the guidance of a therapist and sometimes with an equine specialist present also. Most equine-assisted interventions are loosely based on using feedback from the horse's behaviour and interactions to provide insight and enhance the therapeutic process (Hallberg, 2018). Proponents of equine-assisted therapies assert that interactions with horses provide a unique opportunity and setting for clients to address treatment goals in a safe, non-judgmental, and experiential way (Trotter, 2012).

Although we still have much to learn about the unique features that underlie equine-facilitated interventions, there is a growing body of research focused on understanding what we instinctively know about the improvement in well-being often reported by those who spend time with horses (Bachi, 2013; Karol, 2007; Mueller & McCullough, 2017). Irwin (2013) offers these thoughts:

The horse offers us a powerful opportunity to reach inward and touch our deepest selves. When we get into the round pen, suddenly there's 1,200 pounds of prancing, snorting archetype right there in our face. We can't ignore a horse, any more than we can help what we feel when we stand in front of one. Horses, by embodying one of the deepest archetypes in our consciousness, most definitely stir us up. All those things that are buried away or girdled safely up start swirling around in our psyches (p. 160).

Horses can offer a vehicle for the projections of a client's unconscious worries or fears. Equine assisted therapy then provides the opportunity for individuals to look at what works, what does not work and whose needs are being met while offering a unique opportunity to recognize how personal actions impact others and consider possible new ways to be in relationship with other humans.

Along with misunderstanding about what transpires in an equine-assisted therapy session, there is also a great deal of confusion regarding terminology in the field. It is not surprising that those not engaged as professionals in these services are unaware of the different branches of the broader category of "equine-assisted activities" and their unique contributions. Hallberg (2018) has gone to great lengths to attempt to clarify terminology and categories of services. She stated that "the plethora of terms utilized astounds and confounds most everyone, from patients and referents to funding sources and researchers, to the very professionals providing the service" (p. 39).

Equine-assisted therapy is set apart from services that are organized as non-therapy activities such as adaptive riding (hippotherapy), equine-assisted learning, physical, occupational and speech services. Equine-assisted therapy is also referred to as equine-assisted counselling, equine-facilitated psychotherapy and other similar combinations of terms. The use of "facilitated" versus "assisted" appears to highlight the practitioner's belief of the horse as *co-facilitator* and providing credence to the significance of the horse's contribution. This author will use the term equine-facilitated psychotherapy (EFP) within this thesis. This usage is a personal choice due to situating the horse as a partner and sentient being in the therapeutic interventions, and the focus on an insight-oriented approach to counselling. However, others may have a different view. It is crucial to understand how these terms are operationalized by those using them descriptively. The hope is that the field will continue to work at the standardization of terminology.

Ethical Considerations

The field of EFP appears to be growing and flourishing, which can be an exciting opportunity for more people to experience the healing benefits of this unique alliance. At the same time, there needs to be awareness of the needs and rights of the horses who are being regularly employed to support people to heal emotional and psychological problems. There is much that is still unknown about how horses respond to their involvement in EFP and other equine-assisted pursuits. In a 2018 review of the literature on the topic of the impact of therapeutic activities on horses, there were only five peer-reviewed studies available. The studies were mostly inconclusive as to the impact EFP has on the horses (Hallberg, 2018).

At a minimum, the "Five Freedoms" (ASPCA, 2016) must be adhered to when asking horses to participate in human mental health promotion. The Five Freedoms are freedom from hunger or thirst, freedom from discomfort, freedom from pain, injury, or disease, freedom to express normal behavior and freedom from fear and distress. Ideally, these categories would require a certain amount of objective assessment when horses are working in EFP programs. In the author's experience, it is likely that the community acts as an informal assessor of horse health. The first line of defence is usually the local veterinarian and farrier who interact with the horses on a regular basis. This is not a perfect system, however, and often it is relied upon that those conducting EFP sessions are members of an association or regulatory body following a code of ethics for both counselling and the well-being of the horses.

For all involved to stay safe, awareness of the horse's autonomic nervous system regulation must be considered, and handlers need knowledge of equine reactions to stress and their fight, flight, freeze responses. Horses evolved as prey animals who rely primarily upon their

ability to flee from predators to keep themselves safe (Starling et al., 2016). When creating opportunities for humans to interact in a therapeutic setting, the exercises, activities, and settings must not involve activities triggering a fear-based response. It is when horses (and all animals) feel safe that they can be curious and investigatory (Hallberg, 2018). Henshall and McGreevy (2014) give an example of what can occur when the horses need for safety is not respected:

In a confined space like a round pen or arena where the horse cannot escape, horse trainers might chase the horse or require it to remain in a flight response for up to 15 minutes. Since the horse cannot remove itself, or gain sufficient distance from its pursuer, the sympathetic nervous system is triggered just as if the horse were experiencing a prolonged chase by a non-human predator (p. 3).

Horses showing a fear response have been found to precede most equine-related injuries (Starling et al., 2016), so a confused or afraid horse is dangerous. The review of literature for this study contains some EFP practices that may blur the lines of what is acceptable from this researcher's perspective, although most research articles do not provide detailed accounts of the interventions and activities used during the sessions. The recommendations given for an integrated somatic practice of EFP will only contain interactions with horses that allow the horse to maintain affect regulation and a feeling of safety.

Summary

This chapter has introduced the concepts of complex trauma, interpersonal neurobiology of the autonomic nervous system and self-regulation. The modality of EFP has been introduced as an experiential, integrative intervention which proponents suggest pairs well with somatic psychologies and polyvagal theory for working with complex trauma survivors from a bottom-up

perspective. Reasons why horses are considered effective intermediaries have also been discussed. The scarcity of evidence-based research and the need for the field of EFP to find a balance between research and practice is a concerning phenomenon, as there is an increasing number of practitioners offering different forms of therapeutic interventions for mental health concerns. The importance of the ethical consideration of the horse's welfare in this practice was also highlighted. The following chapters will provide a more in-depth literature review (chapter II), a description of the beneficial characteristics and analysis of the somatic frameworks that converge with EFP, including Polyvagal Theory (chapter III), and recommendations for the use of somatic therapies in the practice of EFP (chapter IV).

Chapter Two – Literature Review

In order to build the foundational context for the role of a bottom-up EFP approach for treating complex trauma, it is essential to first conceptualize and elucidate the specific concepts involved. Then, a review of selected articles examining the use of EFP for various populations suffering from trauma is completed. Studies were included if trauma was assessed or was measured as an outcome. A search of relevant databases resulted in five peer-reviewed studies and three reviews that met the criteria. Studies are summarized later in this chapter, along with an exploration of intersecting themes within the research and implications for future research are discussed.

The early stages of research involved completing a literature review of City University of Seattle's online database. Initial searches included the key terms "equine-assisted therapy," "equine-facilitated therapy," "equine-assisted psychotherapy," "equine-facilitated psychotherapy," "equine-assisted counselling," and "equine-facilitated counselling." Additional search terms were used in conjunction with the above key phrases including "PTSD", "trauma", "complex trauma", "developmental trauma", "early trauma", "somatic therapy", "polyvagal theory", "autonomic nervous system" and "interpersonal neurobiology". The initial inclusion criteria for the research articles were that they were peer-reviewed, primary source papers written in English and published within the last five years in order to privilege current research.

A second round of database searches for studies that addressed the use of EFP for trauma were then conducted. This time the search was not restricted based on years, as all literature on EFP is less than twenty years old. This round allowed for studies that applied EFP principles to a broader group of issues that may not be explicitly identified as trauma, such as at-risk students

and individuals with bereavement issues. The rationale is that many of these subjects would have experienced trauma. It became challenging to know which studies to exclude and ultimately only studies that explicitly included trauma as a variable or measured for trauma in some capacity that had been completed within the last five years were included. The intention of this exclusion criterion was to provide the most succinct information from current research and knowledge. In any field that is in its infancy, as EFP could still be described, information is still changing rapidly and been collected from a grounded theory perspective (Creswell, 2014). The final inclusion criteria also required the studies to use horses as the primary intervention and for the modality to be equine-assisted therapy or psychotherapy. These criteria excluded general animal-assisted interventions and studies of equine-assisted learning programs.

Due to the scarcity of academic research to draw from on this topic, non-academic literature, case studies, and the seminal works of practitioner-researchers such as Bessel van der Kolk, Peter Levine, Pat Ogden, Janina Fisher, Daniel Siegel, Steven Porges, Judith Herman, Lori Haskell, and Kathy Kain were also used in order to elucidate the themes. In addition, the inclusion of the voices of leaders in the contemporary EFP field such as Karen Bachi, Leif Hallberg, Sarah Schlote, Angela Dunning, Debra Marshall, Meg Kirby and Sarah Jenkins are also enlisted to explore, locate, organize, understand and analyze the concepts that intertwine to piece together the early days of the work being done alongside horses to heal the suffering that is inexorably bound to the experience of complex trauma.

Development of the concept of complex trauma

The concept of "trauma" and an attempt to understand all it encompasses has been in the realm of public consciousness for over a century. French neurologist Jean-Martin Charcot was

the first to venture into the study of "hysteria." Charcot's contributions to the field changed the dominant discourse from those suffering from this mysterious illness as malingerers, to providing credibility and dignity to their anguish. His observations and descriptions of behaviour opened the door to his students, namely Sigmund Freud and Pierre Janet to continue his life-long work, adding their own contributions. These works are well documented in their input to our current understanding of the impact of trauma (Herman, 1992). By the mid-1890s, both Janet and Freud had acknowledged that hysteria was caused by psychological trauma. They also both had an understanding that the somatic symptoms they were documenting in their patients appeared to originate from events that were overwhelming and had been banished from conscious memories. These contributions provided a foundation for an exploration of the impact of psychological trauma. Freud's initial work pointed to early childhood sexual abuse as the root cause of hysteria, which has helped to frame current understandings of complex trauma (Herman, 1992).

Unique Characteristics of Developmental Trauma

When trauma occurs in infancy and childhood, it interferes with neurobiological development and the capacity to integrate sensory, emotional, and cognitive information into a cohesive whole (Brendtro, Mitchell, McCall, 2009; Heller & LaPierre, 2012; van der Kolk, 2005). The term *developmental trauma* refers explicitly to the very complex emotional, behavioural, and neurobiological phenomenon that occurs when an infant or child experiences multiple, chronic, and prolonged events, most often which are interpersonal in nature (van der Kolk, 2014). It is also referenced in literature as complex trauma, but the use of *developmental* specifically highlights the developing system in which the trauma is experienced.

While some sources of research indicate that between seven and twelve percent of the population experience developmental trauma, findings from the high profile CDC-Kaiser Permanente Adverse Childhood Experiences (ACE) Study (Felitti et al., 1998), more than sixty percent of adults reported having suffered some form of abuse during childhood. The ACE Study surveyed over 17,000 participants using a simple 8 question survey administered during physical examinations and revealed a graded dose-response relationship between ACEs and adverse health and well-being outcomes across the lifespan (Felitti et al., 1998). The results transformed the way we view childhood trauma and its impact on adult health (Kain & Terrell, 2018). It was also worthy of note that the respondents were mostly white, middle and upper-middle class, college-educated, employed, and had access to health care services (Felitti et al., 1998). This population was not before considered to be at risk for developmental trauma, which makes the results more startling.

The multi-symptomatic clinical profiles collected from the ACE Study were considered similar to those described as under the constructs of "Developmental Trauma Disorder" in children and "Complex PTSD" in adults. The developmental effects often seen in children and adolescents but not captured in the diagnosis of PTSD for adult-onset trauma are: affect dysregulation, disturbed attachment patterns, rapid behavioural regressions and shifts in emotional states, the loss of desire for independent striving, aggressive behaviour against self and others, failure to achieve developmental milestones in a timely manner, loss of bodily regulation regarding sleep, eating and self-care, altered internal working models, somatic problems, expectations of trauma, self-loathing, lack of awareness of danger and chronic feelings of ineffectiveness (van der Kolk, 2005).

In adults, extensive research has been done on the development of the diagnostic criteria for complex PTSD or disorders of extreme stress not otherwise specified (DESNOS) (Pelcovitz et al., 1997). The findings are very similar to the list of symptoms seen in children. The six categories of criteria fall under the headings of 1) alteration in the regulation of affect and impulses, 2) alterations in attention or consciousness, 3) alterations in self-perception, 4) alterations in relations with others, 5) somatization, and 6) alterations in systems of meaning (Luxenberg et al., 2001). The ACE Study confirmed a significant correlation between adverse childhood experiences and later life instances of depression, suicidality, substance use issues, domestic violence, sexual promiscuity, cigarette smoking, obesity, and physical inactivity (van der Kolk, 2005). These findings suggest there is a grey area, or a large range of experiences, in terms of the long term impact of developmental trauma but that there are likely many adults whose resiliency was compromised and may be underserved by mental health systems, partly because of the complex and nuanced nature of their symptoms (Kain & Terrell, 2018).

The Need for a Phased Approach

Trauma therapists appear to agree that interventions for clients with a history of abuse and neglect should be conducted in a series of distinct therapeutic stages (Cloitre et al., 2011; Herman, 1992; Schwartz, 2016). The International Society for Traumatic Stress Studies Complex Trauma Task Force (2011) found that "based on patient observations, clinical scholarship has long proposed that the effects of complex trauma be treated in a sequenced and phase-based fashion (p. 616). Formulations of this approach propose an initial phase of interventions that focus on safety, stabilization and improvement of basic life skills. Only when there is stabilization is it recommended to move to the second phase. The second and third phases include the exploration of traumatic memories for the purpose of reduction of emotional distress

and to reappraise the meaning attached to them in order to work towards integration into a coherent and positive identity (Cloitre et al., 2011).

Judith Herman (1992), in her seminal work *Trauma and Recovery*, described the experience of trauma as follows:

Traumatic events are extraordinary, not because they occur rarely, but rather because they overwhelm the ordinary human adaptations to life. Unlike commonplace misfortunes, traumatic events generally involve threats to life or bodily integrity, or a close personal encounter with violence and death. They confront human beings with the extremities of helplessness and terror and evoke the responses of catastrophe (p. 33).

Herman's (1992) three-stage model for recovery from trauma is still the most widely recognized intervention, despite the passing of over twenty-five years since it was published. Her version of the three stages of recovery are: 1) establishing safety, 2) remembrance and mourning, and 3) reconnection with ordinary life. Herman, however, acknowledged that "oscillating and dialectical in nature, the traumatic syndromes defy any attempt to impose such simpleminded order" (p. 155).

Another leader in the field of trauma recovery, Bessel van der Kolk (2012), stated that "trauma affects the entire human organism – body, mind, and brain. In PTSD the body continues to defend against a threat that belongs to the past. Healing from PTSD means being able to terminate this continued stress mobilization and restore the entire organism to safety" (p. 53). Essentially, when the brain's alarm system is activated in the amygdala, it works automatically to identify whether incoming input is a threat to survival. If the answer is yes, then the autonomic nervous system initiates a whole-body response before we are even consciously aware of danger.

Ideally, once the threat has passed our body aborts this stress response and returns to an even state smoothly. If recovery from this hypervigilant state is blocked or if our medial prefrontal cortex is not able to assess the situation and modulate the lower brain's response, then it becomes much more difficult to control emotions and impulses. van der Kolk (2014) explained that in PTSD the balance between the amygdala and the medial prefrontal cortex is drastically altered. When a person's frontal lobe is not able to access reasoning, meaning, or reflective capacities, our alarm systems may be going off constantly or at the wrong times. This is not just in the case of possible physical threat; the complexity of everyday social interactions also become highly problematic.

From a neurosequential perspective, establishing safety must begin by focusing on control of the body and then moves outward to the environment (Perry, 2006). Trauma survivors can feel very unsafe in their bodies. The overwhelming experiences are often fragmented, frightening somatic sensations that appear to lack rules or reasoning in how, why, and when they appear. People often cannot understand why they respond to small frustrations as though they were being annihilated (Haskell, 2003). Before attending to any other concern, restoration of basic biological patterns in eating, sleeping, and reducing hyper and hypo arousal symptoms must be addressed (Herman, 1992; van der Kolk, 2014; Fisher, 2017). These types of treatments are often referred to as *bottom-up* techniques, as they are developed to work through the body to change the brain, specifically the lower, subcortical areas of the brain outside of conscious awareness and control (Sweeton, 2019).

Bottom-up, body-based techniques work well for targeting change in the amygdala, which is the fear center of the brain (Ogden, 2015). The goal is to reduce the stress response in the autonomic nervous system, which will result in a decrease in hypervigilance (Levine, 2010).

Another goal is to regulate the insula, which can improve interoception and result in less reactivity and dissociation (Porges, 2011). The hippocampus can also be targeted, resulting in increased ability to calm fear responses and remain in the present moment. Proponents of this approach believe that the trauma therapist's job is to "create in the therapy hour a neurobiologically regulating environment that enables the client's nervous system to experience greater safety and therefore an expanded capacity for tolerating both past and present experience" (Ogden et al., 2006 P. 270)

Equine-Facilitated Therapies for Trauma

Currently, there are many therapists and equine programs conducting equine-assisted therapies, but there appears to be little consensus about how they should be conducted or how effective different therapy programs are for the treatment of complex trauma. Thus far, research on EFP has focused mainly on its efficacy as a treatment for veterans suffering from combat-related PTSD, at-risk youth or those diagnosed with autism spectrum disorder (Lentini & Knox, 2015; Buck, Bean & de Marco, 2017). Several studies have evaluated the mental, emotional, and social factors that EFP claims to address and suggest that various populations benefit from interventions with horses; however, there is no standardization in the intervention modalities (Staudt & Cherry, 2017). The following modalities were utilized in recent studies on EFP: Equine Facilitated Therapy for Complex Trauma, Equine Facilitated Cognitive Processing Therapy, Equine Partnering Naturally©, Professional Association of Therapeutic Horsemanship and Body-Oriented Psychotherapy. This is not nearly a comprehensive list of integrative therapies for EFP. The nature of EFP as it is currently structured is that many different modalities are combined with EFP principles in order to provide effective outcomes. A best practices approach for utilizing equines in therapy is not yet a reality.

Equine Facilitated Therapy for Complex Trauma (EFT-CT)

EFT-CT may play an integral role in providing trauma care to children and adolescents. In the only current study available explicitly for the treatment of complex trauma by means of an EFP model using the inclusion criteria determined for this review, outcome data supported a decrease in symptoms associated with trauma (Naste et al., 2017). Decreases in anxiety, depression, somatic/sensory complaints, and behavioural dysregulation were noted from the standardized self-report and clinician or caregiver rated measures assessed in the study (Naste et al., 2017). There was also a marked improvement in the participants' capacity to recognize and respect boundaries within relationships as well as higher-order cognitive functioning and the development of positive coping skills.

Naste et al. (2017) utilized an integrated model of a trauma-informed framework called Attachment, Regulation and Competency (ARC) and EFP. ARC is an evidence-based approach for youth who have experienced complex trauma (Blaustein & Kinniburgh, 2010). The ARC approach addresses multiple domains of impairment associated with complex trauma by addressing the core components of safety, attachment, and regulation within its framework. Integrating existing EFP practices with the ARC model resulted in what they purport to be a promising new model called Equine Facilitated Therapy for Complex Trauma (EFT-CT) (Naste et al., 2017). A further discussion of some of the themes identified in this study is found later in this chapter.

Equine-Facilitated Cognitive Processing Therapy (EF-CPT)

Cognitive Processing Therapy (CPT) is a form of cognitive behavioural therapy that has demonstrated effectiveness in reducing symptoms of PTSD (American Psychological

Association, 2020). It is an evidenced-based therapy, meaning it has been proven to be effective through rigorous scientific research. It is said to provide a way to comprehend the difficulties of recovering from PTSD and how the symptoms impact everyday life. CPT is delivered in a manualized format over a period of 12 sessions. The goal is to help people learn how to challenge and modify unhelpful beliefs related to traumatic experiences. The premise is that by doing so, a new understanding of the event(s) will reduce the negative impact it is having in their current lives. Wharton et al. (2019), describes the process by explaining that "maladaptive cognitions resulting from the traumatic event are directly modified. By repeating the challenges while concurrently utilizing cognitive restructuring techniques, participants can develop a healthier and more balanced internal evaluation of the event and themselves" (p. 269).

CPT is endorsed by the U.S. Department of Veterans Affairs and Defense and was utilized as the foundational model for a pilot study of veterans who have PTSD (United States Department of Veterans Affairs, 2018; Wharton et al., 2019). Veterans with PTSD are said to have a myriad of challenges in addition to the conventional diagnostic symptoms. Suicidality, relationship issues, employment problems, somatic complaints and legal difficulties have all been documented (van der Kolk, 2014). In an effort to improve outcomes and decrease attrition rates in veterans, EFP was tested for its integration with CPT. Attrition rates with this population are believed to stem from a high level of avoidance in confronting traumatic experiences, impaired relationships with therapists and the stigma of seeking help (Wharton et al., 2019). The belief was that the equines would serve as intermediaries between the therapist and the veterans with the hope that therapy may become more palatable for the veterans in need of intervention. The EF-CPT model used in the study incorporated the 12-session structure of a typical CPT intervention as well as including equine-facilitated concepts to provide an opportunity to address

physiological dysregulation through experiential activities. The sessions addressed topics consistent with CPT protocol, such as "identifying emotions, retelling of the traumatic event, identifying thinking patterns, and addressing trust, intimacy, power, and control" as well as completing homework assigned in a CPT workbook (Wharton et al., 2019, p. 271).

The researchers in the Wharton et al., (2019) study believed the introduction of the evidenced-based manualized CPT approach could allow them to begin to identify whether EFP can provide equal or better outcomes than the traditional formats of CPT delivery. There is already a strong body of literature touting CPT as a "best practice" intervention with veterans (Asmundson et al., 2018). Building on an already successful base could have significant impacts in clinical practice settings. In total, there were 27 participants, with 78% being male, all meeting the Veterans Affairs criteria for PTSD. Researchers claim that at the end of this study, 84% (n=21) no longer met the criteria for diagnosis.

Equine Partnering Naturally©

In a small, non-randomized study of 16 adults with current PTSD symptoms, results showed significantly reduced PTSD symptoms, decreased emotional responses, decreased anxiety and fewer symptoms of depression following individualized weekly treatment for six weeks (Earles et al., 2015). The model Equine Partnering Naturally© (Yetz, 2011) was utilized for the study and had mindfulness as a central tenet in its application. Mindfulness involves being aware and present for the changing sensations in our bodies and our continual flow of thoughts and emotions. Siegel (2010) conceptualizes mindfulness as "intentionally focusing attention on moment-to-moment experience without being swept up by judgements or preconceived ideas and expectations" (p. XIV). Horses are a naturally mindful and present

species and can lure us into a state of mindfulness simply by being near them. Dunning (2017) provides the following list of attributes that horses are attracted to in humans and which she encouraged EFP providers to incorporate as a primary focus in their programming:

- Present
- Conscious
- Body-aware and centered
- Breath-focused
- Grounded
- Attentive to the present moment and task
- Connect to our heart, i.e. following our heart's desire and practicing 'loving kindness,' a central tenet of Buddhist mindfulness practice
- Have clear boundaries
- Not being ruled by our False Self or ego
- Mind, body and soul are in alignment
- Attentive to energy and emotion in ourselves and others
- Going with the flow of what wants to happen
- Prioritizing being and relating over doing, or achieving a task
- Somatically rather than cognitively focused (p. 117)

The researchers in the Equine Partnering Naturally© study hypothesized that working with horses could increase insight and mindfulness, which, in turn, could decrease symptoms of PTSD, anxiety and depression. Yetz (2011) proposed that horses, as large imposing animals may

encourage mindfulness, present moment focus and a need for attention in order to stay safe in their presence. During the individual sessions, participants worked on developing non-critical self-awareness, improved concentration and listening skills, healthy boundary setting, mastery in challenging situations, horsemanship, focusing and inner stillness techniques.

Professional Association of Therapeutic Horsemanship

A 2017 study of 36 young people between the ages of 10-18 was conducted utilizing a generic framework of EFP delivered by a team consisting of a clinical social worker and a riding instructor (Mueller & McCullough, 2017). A therapist partnering with an equine specialist is a typical duo in EFP interventions, although it is not mandatory and should always be considered on a case-by-case basis. Many certification bodies will explicitly state their mandate for how the services should be delivered (Hallberg, 2018). The study listed the therapeutic riding instructor as being trained by the Professional Association of Therapeutic Horsemanship (PATH). The social worker listed as the facilitator has no mention of affiliation or adherence to any particular theoretical underpinning.

In a review of membership associations, Hallberg (2018) stated that PATH primarily serves non-licensed instructors and those who teach adaptive horsemanship, riding and equine-assisted learning programs. She further stated that "its expertise lies more prominently in the area of adaptive riding rather than therapy services provided by licensed professionals" (p.77). According to Trotter (2012), a PATH certified equine specialist in mental health is required to work with a licensed mental health professional during all EFP sessions, but there are no requirements for the mental health professional to be dually credentialed as a PATH specialist.

EFP is generally considered an adjunct to existing therapy, where therapists can incorporate the use of equines into their professional theoretical orientation. This study does not elucidate on the framework underpinning the EFP modality. This omission would make it challenging to analyze or replicate the findings.

The EFP group in this study participated in various activities such as leading, grooming, groundwork, and mounted activities. The control group received weekly trauma-focused cognitive behavioural therapy. Researchers found the EFP participants to have a significant decrease in PTSD symptoms throughout a 10-week group-based intervention. However, the control group for this quasi-experimental study was found to have similar results with traditional office-based therapy (Mueller & McCullough, 2017).

Body-Oriented Psychotherapy

Using body psychotherapy in clinical practice means that the body is seen as a source of information about the client's state of being – both in visible body language and in creating an emotional atmosphere (Young, 2006). The body is also seen as a repository of emotions and memories which may be "held" somatically. Notably, as stated in the previous chapter, the body is seen as an entry point for change, bypassing potential cognitive resistance (Rothschild, 2003). Young (2006) explained that "body psychotherapists are aware that the body is mostly a physical manifestation of something much larger and less definable; a multi-layered collection of different systems and energetic exchanges" (p. 27).

Kern-Godal et al. (2017) conducted a qualitative thematic analysis of interviews with eight adults engaging in a version of body-oriented EFP for the treatment of substance use disorders. The researchers were interested in elucidating the impact of the relational aspect of

being with horses in the retention of individuals in treatment for enough time to enable beneficial change. Another earlier study suggested that EFP may be a factor in participants remaining in treatment longer and therefore increasing the likelihood of completion (Kern-Godal, Arnevik, Walderhaug, & Ravndal, 2015). Those findings encouraged the researchers to explore the significance of the human-horse relationship in addictions treatment.

The study by Kern-Godal et al. (2017) was based on a group program facilitated by therapists who were dually credentialed as riding instructors and experienced horse handlers. Participants engaged in grooming, feeding, riding, and driving the horses as well as stable and tack cleaning. Researchers conducted interviews to glean insight into the participant's relationship with the horse and the meaning they attributed to the relationship. Three main themes were common among the interviewees; relationship with the horse, emotional effect, and mastery (Kern-Godal et al., 2017). All participants conveyed the importance of having a special relationship with the horses as a primary reason for the successful completion of the EFP program. A consensus was also that being with the horses allowed them to focus on something besides their issues. Moreover, a general sense of self-efficacy and empowerment was included as a primary positive outcome of the program.

Common Factors in EFP Literature

While conducting the literature review, themes appeared in the research that did not rest exclusively in the realm of any particular therapeutic intervention. These common factors have been expressed in other EFP and complex trauma literature and necessitate further exploration as essential facets of the EFP experience. They are defined below, and examples are provided from the literature reviewed for this thesis.

Principles from Attachment Theory

Some empirical studies are suggesting that EFP interventions could be efficacious with populations who could benefit from an attachment-based model, which includes those suffering from complex trauma (Bachi, 2013; Naste et al., 2017). Deficiencies in primary attachments with parents or caregivers can be counteracted using EFP with opportunities for restoring emotional capabilities. Researchers in this field purports that there are parallels between attachment to humans and attachment to animals, and these similarities require further investigation (Bachi, 2013; Schlote, 2018).

Attachment, according to Bowlby (1969) and Ainsworth (1973), is a deep, enduring emotional bond that connects one person to another across time and space. The foundation of developing attachment is through safety, stability, and security in early life adult-child relationships. In working to repair attachment bonds in a therapeutic setting, the process can be enriched by the presence of horses, which adds an additional living being in the relational context and evokes feelings, thoughts, and behaviours in the client. Bachi (2013) suggested that these evocations can be utilized to advance the therapeutic process as it relates to attachment theory. Concepts from attachment theory such as a secure base and haven of safety through the provision of a holding environment, affect mirroring, mentalizing and reflective functioning and non-verbal communication and body experience can all be integrated into EFP models (Kirby, 2016; Schlote, 2018; Shambo, 2013)

In one study, the concept of attachment was operationalized through relationship building between adolescents and therapy horses (Naste et al., 2017). The researchers believed that part of the EFP function was to assist the youth in forming and maintaining meaningful relationships.

The clinician's role-modelled affect management strategies (coaching, appropriate interactions with the horses) so the client could learn how to attune to the horse. The "immediate and uncomplicated response of the horse to the client's behaviour serves as a quick and effective teaching tool," which helped the client to gain mastery in non-verbal communication skills (p. 293). As this process continued, the youth's relationship with the horse deepened. In another study of youth, the participants rated their bond with the horse as very high consistently throughout the 10-week program (Mueller & McCullough, 2017). Almost all the participants emphasized that their relationship with one or more of the horses was one of the most important characteristics of the EFP program (Kern-Godal et al., 2016). There was a common theme of feeling as though the participant and horse were "choosing one another" (Kern-Godal et al., 2016, p. 6) based on perceived similarities between them. Participants described a relationship with a specific horse or horses as understanding, non-judgmental, emotional, and fun as well as being therapeutic and educational. These sentiments are a common theme in the theoretical literature available on EFP (Bachi, 2013; Burgon, 2014; Lentini & Knox, 2015). They also occur regularly in qualitative studies of horsemanship (Irwin, 2013; Kohanov, 2013; McKormick & McKormick, 1997). In these descriptions, one of the basic concepts of attachment theory and attachment-related processes are evident (Ainsworth, 1973). Growing attachment is indicated in the participant's accounts of feeling understood and affirmed by the horse's presence (Kern-Godal et al., 2016; Naste et al., 2017). "Mentalization" (reflective functioning), taken from attachment theory (Ainsworth, 1973), is seen in this understanding of how acknowledgment of the horse's responses to them could impact their behaviour. These new skills and felt sense of attachment could then be generalized to human relationships.

In her research on disorganized attachment, Mary Main (Main & Solomon, 1986) discovered that any given attachment style could be modified over time. Her research showed that adults could move to what is referred to in the literature as an *earned secure attachment style* regardless of history, given the right circumstances. Being able to establish closer emotional relationships with other living beings can assist with developing more secure attachment patterns (Siegel, 1999). This early and significant attachment to the equine partners in EFP could be a positive attribute to motivate clients to participate in therapeutic interventions in order to begin to heal early attachment ruptures.

Benefits of a Non-Traditional Setting

The benefits of being in nature have become well documented (Selhub & Logan, 2012). The farm milieu provides a natural setting that can be dynamic and unpredictable and can include opportunities for interacting with many other domesticated farm animals besides horses. Many clients state they prefer the less sterile and formal experience of the traditional clinic office setting (Dunning, 2017; Trotter 2012). Several systematic reviews of EFP revealed that the farm setting was a beneficial factor in positive outcomes (Lentini & Knox, 2015; Staudt & Cherry, 2017).

All the studies in this literature review mentioned the unique farm setting as positively influential in the treatment outcomes. Wharton et al. (2019), in their study of a manualized EFP treatment for veterans, suggested that a barrier to care are issues related to the negative perception of accessing mental health services. They purport that veterans with mental health issues may be more likely to engage in non-traditional options such as EFP due to the unique setting and activities this form of experiential therapy provides. Bachi (2012) noted that the act

of travelling to a rural setting and engaging in an EFP experience provides clients with a sense of anonymity and decreases the sense of being a "patient." Mueller and McCullough (2017) asserted that a majority of this treatment population had received intermittent office-based therapy for years with less success. They postulated that drop-out rates of office-based traditional therapy may be higher for certain populations than in non-traditional settings, such as farms. Youth particularly have been known to refuse to attend office-based interventions. However, going to a farm to participate in EFP can modulate that resistance. For those who have not responded favourably to traditional therapies, EFP could be an option.

Experiencing Safety

An internal and external experience of safety is a critical component in complex trauma treatment. Many experts argue that any treatment for this population is harmful if safety is not a core component that is addressed at the outset and throughout the therapeutic relationship (Courtois 2004; Herman, 1992; Hull & Corrigan, 2019). In his seminal work on how trauma reshapes the body and the brain, *The Body Keeps the Score*, Bessel van der Kolk (2014) emphasizes the importance of the feeling of safety when he states that "being able to feel safe with other people is probably the single most important aspect of mental health: safe connections are fundamental to meaningful and satisfying lives" (p. 81). Porges (2017) illustrates how a sense of safety and social connection are the central components of healing when he states that "the feeling of safety *is* the treatment" (p. 187).

A growing bond with a horse can be a first step in learning to begin to feel safe enough to relate to humans in a meaningful way. van der Kolk (2014), a proponent of alternative therapies for complex trauma, goes on to say, "some people don't remember anybody they felt safe with.

For them, engaging with horses or dogs may be much safer than dealing with human beings" (p. 215). Horses are large, instinctual and can move quickly so humans have a healthy respect and heightened awareness in their presence. EFP facilitators begin a relationship with a new client teaching them how to stay safe with horses, as horses need clear boundaries and respect, which are imperative in healthy human interpersonal relationships as well. This education at the beginning of EFP work can also impart to the client that there are safeguards in place for their well-being. Melson (2000) explained that the presence of a friendly animal is associated with safety and, as such, reduces relaxation and can accelerate relationship building with the horse and therapist as they get to know each other.

There were several examples available in the literature review, which provided evidence that the concept of safety was an integral factor in the success of the EFP interventions provided. Naste et al. (2017) defined safety as referring to "a shared sense of relational safety between the client and horse, which is theorized to foster treatment engagement, positive attachment, and relationship building" (p. 292). They go on to suggest that part of the success of the EFT-CT model is the incorporation of safety at the outset of counselling which begins from the moment the client comes onto the farm. There is an opportunity to create a felt sense of both internal and external safety in the presence of horses that can be transferred to human interactions. Bachi (2012) in her discussion on attachment theory and EFP, provided the example of a sense of safety and holding environment that can be established in the unique natural setting of an EFP facility. She gave the example of a literal and symbolic holding environment of the horses back, if utilizing mounted EFP strategies, as well as the acceptance and non-judgement of the horse contributing to the client's sense of being safely held. Kirby (2016) provided another example of emotional safety, in that horses are authentic – what they experience or feel they express. This

modelling provides non-judgmental feedback to humans, which can contribute to building trust and relational safety. An example of this might be if a horse reacts to a client's body language and energy by moving away from them, but then comes closer as the client lowers their energy and slows their movements. The horse gives immediate feedback that they are not comfortable with the human in that context but are open to connection again when the human respects their boundaries. The human can trust that the horse's response is genuine and unfiltered, which can contribute to feeling safe.

Inviting Physical Contact

Lack of healthy, nurturing, and appropriate touch is often one of the contributing factors of developmental trauma (Kain & Terrell, 2018; Ogden & Fisher, 2015). The Romanian orphan studies (Bucharest Early Intervention Project, 2017) provides a shocking example of the need for physical touch to achieve neurotypical development. Half of the 136 children (ages six months to three years) studied living in impoverished orphanages since birth were moved into foster homes. The other half remained in the orphanages with no influence from the researchers.

Over the years, the researchers observed disturbing results for the children left in the orphanages. Delays in cognitive function, slowed motor development and language, psychiatric disorders and socioemotional deficits were recorded (Kain & Terrell, 2018). The children moved to foster care showed signs of a significant improvement in those realms. This longitudinal study provided a clear picture of what can happen without the benefits of affection, connectedness, and attunement from caregivers.

It is also essential to note that repair is possible. Current research indicated that human brains remain plastic throughout the lifespan, which suggests that providing regulation and

reparative touch can improve neurological and physiological impairments caused by abuse and neglect (van der Kolk, 2014). Supporting healthier regulation will have an impact on health and well-being even later in life (Levine, 2010). Dr. Ann Bigelow, a researcher who studied the importance of physical contact, stated that "touch can be one of the most powerful forms of healing for those whose early trauma included a disruption in their experience of safe, appropriate touch" (as cited in Kain & Terrell, 2018, p. 199).

Building on the concept of safety can allow the client to progress further to experience safe touch and physical contact with horses. Mueller & McCullough (2016) agreed with the findings of Dr. Bigelow and suggested that the therapeutic effects of physical contact with horses in EFP may be its most significant contribution to healing trauma. Youth who have experienced neglect and early abuse often do not feel safe in their bodies (Perry, 2006). They can both crave touch and avoid it out of fear (van der Kolk, 2014). Inviting touch in the forms of grooming, petting, and riding offers a safe and sanctioned means by which the client can allow the experience of physical sensation and holding that is not available in traditional therapeutic environments. In this way, clients can transfer learning about creating safe and trusting relationships with horses to elements of their human relationships.

Application of Self-Regulation Strategies

Regulation is a term used to describe the ability to manage emotional states and to calm ourselves during times of heightened emotion (Kain & Terrell, 2018). This process is learned and integrated through observing others and through our early attachment (Ainsworth, 1973). The clinical expectation is that a client's neurosequential development did not progress enough to allow for the ability to self- and co-regulate. The process of co-regulation is taught when a

caregiver mentors, role-models, and acts as an external source of soothing when a child is distressed. Once a pattern of co-regulation is in place, the child can move to the next stages of development towards emotional maturity (Schoore, 2001). When this does not occur, a lack of regulation will affect all aspects of the self: physiological, behavioural, emotional, and social. It is, therefore, common that dysregulation is a primary feature of complex trauma symptomology (Ogden & Fisher, 2015).

Levine (2010) explained that most people think of trauma as a mental or brain disorder; however, he argued that it is also prevalent in the body. Traumatized people are often either overwhelmed by their bodily sensations or are completely shut down against them. Either way, they cannot discern between various sensations, which hinders the ability to take appropriate actions. The need for awareness of nuance in interpreting sensations is compromised, and therefore the tendency to over or underreact is typical. This misinterpretation of bodily states and signals due to lack of embodiment, or a lack of felt sense of being in their body, is essential to address in trauma therapy (Ogden & Fisher, 2015; Rothschild, 2003).

The use of one's body is the primary tool to communicate with horses, which makes it a critical component of EFP. A typical example is that horses will often have strong reactions to quick, impulsive movements, so clients need to learn to slow their bodies in order to have the horse stay within their window of tolerance. *Window of tolerance* is a term coined by Dan Siegel (1999; 2010) to describe the optimal psychological and physiological "window" within which mammals can be activated by a stressor and still be capable of settling naturally. It will be discussed in more depth in the following chapters. Using the horse's natural rhythms of "calm and alert" (Dunning, 2017) allowed the client to practice co-regulation, which is a critical component of treatment for complex trauma and is emphasized in numerous models of treatment

(Dana, 2018; Heller & LaPierre, 2012; Schwartz, 2016). As the client practices using their body differently, they will experience the horse's state shift in response, which will transform the client's internal affective state. These repetitive positive experiences with the horse and therapist support long-term changes in the client's ability to modulate states (Levine, 2010).

Studies have suggested that as clients become aware of feedback from the horses regarding their gestures or postures and learn from the clinician how to regulate physical responses, these lessons can be generalized to communication with other humans. In one study of the client's experience of the horse during a substance abuse treatment program, participants described better awareness of their own emotions and behaviour as a result of their interaction with the horses (Kern-Godal et al., 2016). They commented that learning about how their behaviour appeared to have an impact on the horses and understood that they could change their behaviour to get a different outcome. One participant summarized the experience by stating:

If I'm calm then the horse is calm and if I make a sudden movement or think of something else, and appear to be unfocused, or just mess around, the horse will be like that as well. So, horse therapy means a lot to me in a way because I have to be present and consistent. And then when I am, that's a pretty good state of mind to be in (Kern-Godal et al., 2016, p. 7).

In another study utilizing case study examples, an 11-year-old participant was described as "becoming dysregulated easily, evidenced by sudden increases in energy, difficulties with boundaries and bodily awareness, and oppositional behaviour" and "often seems unaware of bodily sensations, which inhibits her ability to self-regulate" (Naste et al., 2017, p. 296). Over two years in the program, this participant made significant gains and showed a marked increase

in her tolerance for more difficult conversations and her emotions, interpersonal challenges, and self-regulation issues. These conversations were often had during horse grooming sessions. Effective grooming requires consistent and rhythmic attention using a series of different brushes. The participant became regulated enough during these sessions to engage in conversations with her therapist with a level of clarity and organization that was atypical for her at that time (Naste et al., 2017). The time spent caring for the horse also resulted in a secure attachment bond between the horse and the youth, which involved safe touch and mutual respect.

A Sense of Mastery

Studies suggest that one of the reasons EFP is advantageous for complex trauma survivors is due to the sense of mastery attained through skill-building, an increased sense of competency, the relative absence of interpersonal triggers, and the co-regulation facilitated by interactions with the horses (Lentini & Knox, 2015). In the study of the client's experiences of the horse/human relationship, it was the most frequently mentioned therapeutic value (Kern-Godal et al., 2016). Researchers uncovered that the operationalized meaning of the term "mastery" meant a combination of feelings of having control, a sense of achievement and overcoming the fear most felt when first encountering the horses. One participant explained the feeling by stating, "I feel that they give you a pretty good feeling of mastery. When I am able to be with the horse by myself and feel that it is safe and that I'm secure at the same time. It creates this kind of personal space, which feels very good" (p. 8). Although most EFP programs do not focus on traditional horsemanship techniques and skills, there is still a basic sense of achievement from learning something new, especially for those with limited or no horse background.

Limitations of Existing Studies on EFP

The evidence for the impact of EFP on outcomes is currently limited due to small sample sizes and the lack of rigorous research designs (Buck, Bean & de Marco, 2017). However, comprehensive reviews of the studies that have been published suggest that this alternative experiential treatment for trauma be considered for further investigation (Brandt, 2013; Lentini & Knox, 2015). For this reason, clinical researchers should continue to explore the efficacy of EFP and work to identify the underlying constructs that contribute to its effectiveness. Karol (2007) explained the expected potential of the future of EFP by summarizing, "when an advanced-level clinician works in the EFP setting, the therapeutic work can move from a narrow use of cognitive-behavioural therapies, here-and-now therapies, and limited stages of personality development to a more complete psychotherapeutic experiences and involvement" (p. 78).

The following chapter seeks to address the gap in EFP literature pertaining to the lack of information provided about evidence-based somatic frameworks and their theoretical foundations that are understood to be efficacious in EFP work. The principles of somatic therapies are introduced, specifically those from sensorimotor therapy and somatic experiencing. They will be viewed through an attachment theory lens. Polyvagal theory will be introduced as an additional complement to EFP somatic work. Although there is a lack of empirical studies, many therapists allude to transpersonal benefits of body-centred EFP practices, including somatic aspects, a calming effect, and equines increasing clients' attentiveness and their ability to be present in the moment (Dunning, 2017; Jenkins, 2019; Marshall & Pelletier, 2013). These experts suggest that somatically based EFP principles offer the unique features of relational aspects, metaphoric insight, instant feedback and mind-body integration.

Chapter 3 - Core Concepts of Somatic Therapies

It has been addressed in earlier chapters that trauma imprints both the body and the mind, and the impact is known to be drastically worse when the trauma occurs in early life and is relational. It has also been established that so-called "talking cures" have merit, but limited effectiveness when attempting to access and alter the workings in lower regions of the brain. Because trauma is experienced by and in the body, work with traumatized clients is arguably more effective when it includes a somatic component. This chapter will attempt to build upon these concepts while describing the principle elements of somatic interventions that can be utilized in EFP trauma work. The final chapter will describe and elucidate on the clinical application of EFP and the integration of somatic principles.

History and Development of Somatic Therapy

Somatic approaches are derived from works of some of the most influential psychotherapists from previous centuries. Body psychotherapy dates back to the 1880s and the work of Pierre Janet, Wilhelm Reich, and Sigmund Freud. Each early effort claimed different aspects of knowledge related to the subject. Janet's work included the first significant findings of the importance of working with the body with traumatized patients. Reich developed the idea of "muscular armour," the expression of the personality in the way the body moves. Both concepts were considered massively controversial for their time. Heller (2012) has written a detailed account of the history of body psychotherapies. He described the various ways the body has been brought into therapy, including Freud's focus on biological drives. It is said that Freud's psychoanalysis grew out of a primary focus on body-oriented work. However, by the 1930s, there was a definitive shift to pursuing psychoanalysis, or the "talking cure," for which Freud is best known (Young, 2006). Psychoanalysis did focus some interest early on in how the psyche

can affect the body, but that dissipated over time, and eventually, the idea of non-verbal communication was effectively ignored. Thus, it began an era focused mainly on the mind.

There was a long period of a larger, cultural trend of disownment of the body, which paralleled the growth of psychoanalysis and an increased fascination with an understanding of the mind. During that period, the body was characterized in numerous ways, which emphasized its inherent 'problematic' nature with a distinction and separation from the 'true self.' Some examples of this portrayal can be found in cultural beliefs that bodies are sinful, should be controlled through diet and exercise in the pursuit of perfection, should be medicated or fixed by the medical professional, should be transcended in a myriad of ways such as through drugs, prayer or meditation, or are something to be exploited for others and in the interest of capitalistic greed. Young (2006) highlighted the era of the mind-body split, as epitomized by Descartes' "I think, therefore I am," as a time of enforced separation that is slowly being overcome as the significance of the information the body possesses gradually makes its way back into the psychological realm.

Mainstream therapies are now attending to the matters of the body again after approximately 70 years of it having been disavowed. It was not until 2004 at a conference in the UK entitled "About a body: Working with the embodied mind in psychotherapy" that psychotherapy began to re-establish a foothold with an acceptance of the incorporation of the mind and body as an interconnected whole. Gerda Boyesen, a prominent psychotherapist of the 1970s, whose work contributed to the reemergence of body psychotherapy, captured the reasoning of the need for a change to the dualistic paradigm:

Our bodies carry the scars of our historical traumas, not just physically, but also in behavioural holding patterns, in deep muscle structures, in visceral tensions, in our shape

and morphology, in patterns of psychodynamic transference, and in distortions of our perceptions. Our bodies have become, in effect, our psychic dustbins, and we need to find ways of working with all of these aspects constructively. We cannot ignore the body in psychotherapy. (as cited in Young, 2006, p. 23)

Marzillier (2014) noted the irony of how certain therapies previously regarded as "the work of cranks or charlatans" (p. 202) such as somatic therapies, are now being reevaluated as potentially useful.

Core Concepts of Somatic Therapy

Somatic therapy approaches are unique in the way that problems are addressed in three main ways when compared to more traditional methods. First, the body and mind are treated as inseparable aspects of self-experiences. Despite this, there exists an interconnected developmental and hierarchical trajectory of responses available. They range from instinctual and physical arousal and defences to more complex emotional and cognitive experiences that include the ability for self-reflection, beliefs, and meaning-making. Second, there is an emphasis on the nonverbal experience; specifically, sensory awareness and emotional experiences aimed to enhance body awareness. By including the body as a central component in processing trauma, the use of sensation and movement can have a positive impact on the client's cognitions, emotions, belief systems, and capacity for relatedness (Levine, 1997; Ogden & Minton, 2000). Third, the focus is rooted in the present moment and is primarily on the body and immediate sensations. This present moment focus is not in search of escape or transcendence of the experience or to make judgements or interpretations of it. This perspective is different from traditional therapies, which tend to focus on how people witness, interpret and make meaning

from their experiences. The following section will expand on these principles to further the understanding of the unique contribution somatic therapies have in the field of traumatology.

Hierarchical Information Processing

Somatic therapy principles can be more easily understood by first outlining the basic principles of the hierarchical levels of information processing that occur in the brain. Though the brain exists as an integrated whole, it consists of three systems that are hierarchically organized, meaning the higher-level functions depend on the integrity of the lower levels. This concept expands on the previously discussed "top-down" and "bottom-up" view of addressing psychological aspects of trauma. Adult activity is primarily based upon higher-level top-down processing. In contrast, the actions of young children, who are generally governed by somatic and emotional states, are commonly dominated by the lower level sensorimotor processing functions. The lower, more primitive functions of the sensorimotor level are associated with overall body processing and involuntary functions. Some examples of this level are reflexes and the fight, flight, or freeze response, which is discussed later in this chapter. The midbrain and cortex function at higher levels and are responsible for more complex processes such as abstraction, perception, reasoning, language, and learning. The nature of this hierarchy dictates that higher levels of functioning generally influence and direct the lower levels. An example of this principle can be seen in an individual's decision (cognitive function) to ignore the sensation of hunger despite experiencing the physiological symptoms (sensorimotor function) that are associated with it, such as a growling stomach, dizziness etc.... There is constant, unconscious communication between the different levels.

This interplay between the mind, the body, the emotions, and the social context is the focus of somatic psychology. It is believed to be through the integration of thoughts, feelings,

and sensations that opportunities for personal and relational insight can occur. All models of somatic therapies adhere to the common belief that the best way to work with people is to incorporate a focus on and facilitation of changes in the body during the therapeutic process. As explained in chapter one, this is referred to as *bottom-up* processing and can be contrasted with *top-down* techniques that concentrate attention on cognitive and emotional aspects of the mind. Body-centred therapists place emphasis on body sensations, movement, physiological arousal, and re-experiencing trauma in somatosensory fragments (Ogden et al., 2006). The role of the therapist is to facilitate self-awareness and self-regulation in order to help clients discover new ways of being. This objective can still include a focus on higher-level brain functions throughout the process.

Somatic therapists see the body's reactions as an opportunity to enter the problem at a different level than in traditional therapeutic interventions. By connecting somatic, emotional, and cognitive experiences is believed to enable a shift away from habitual patterns of thinking and feeling that the individual has likely been trying without success. Often people are already using cognitive strategies such as trying not to think about the problem or attending to negative thoughts about themselves and the feelings they are having. Somatic therapists work from the premise that is understanding what occurred and why is often not enough to resolve the distressing automatic physiological responses. If this were possible, most people would have been able to rationalize themselves into feeling better already. Certain coping mechanisms may even be contributing to maintaining the problem. When the interventions expected to help do not eradicate the problem, it can become further internalized and even worse over time. Including somatic experiences is expected to facilitate the development of a coherent self and promote the overall sense of well-being they are seeking.

Internal Senses

The sense that registers the state of the body's internal environment, such as heart rate, respiration, pain, temperature, visceral sensations, and muscle tension, is often referred to as the *internal sense* (Schwartz, 2016). This information helps to identify and name emotions. Each core emotion has an accompanying set of distinct body sensations referred to as *affect*. Affect can be considered the biological aspect of emotion. Our first impressions of an experience come from our senses and are connected to somatic sensations such as smell, sight, sound, touch, taste, movement, position, behavioural sequences, and visceral reactions. Neurologist Antonio Damasio (1999) found that emotion is a conglomerate of sensations that are experienced in differing degrees, both positive and negative. Body sensations cue awareness of the emotions. The body sensations that correspond to cue emotions are called somatic markers. They are the basis for weighing the consequences of decisions and identifying preferences. Damasio argued that emotion is necessary for rational thought and meaning-making.

Working to differentiate the sensations of physiological arousal from emotional arousal is key to resolving emotions related to traumatic events. Often body sensations are interpreted as an emotion that contributes to escalating both. An example often seen is of the body sensations of a rapid heart rate and trembling interpreted as panic. They can be experienced simultaneously, which can set off a cognitive belief of "I am not safe." All levels of experience can then intensify, and arousal can escalate beyond the person's tolerance. By working with clients to uncouple and differentiate the emotion from the body sensation, the client can return to a functional level of arousal and then begin to integrate them. This is normally done by attending to the physiological sensations without attempting to interpret or stifle them until they subside. Over time the client can learn to sense and pay attention to body sensations while finding ways

to describe and articulate the subjective experience. The therapist can help to track these sensations, and by doing so, the sensations often spontaneously transform into ones that are less disturbing (Levine, 1997). Learning to quiet distressing arousal is the foundational aspect of self-regulation and sets the stage for therapeutic progression.

Somatic responses that contribute to dysregulation, like the ones described in the previous paragraph, may not be attached to explicit recollections of traumatic events. Often people with complex trauma are not able to access clear memories to make sense of their distressing somatic symptoms. Those bodily sensations are implicit memories of trauma. Conscious memories are necessary to create emotion but affect and feelings can exist without memory of prior experience. One of the goals of trauma therapy is to help survivors understand those bodily sensations. For this to occur, clients must first be able to feel and identify them. Then they must name and describe them and describe the meaning they ascribe to them in their current life. In some cases, they are then able to connect the relationship of the sensations to the past trauma, but this is not always the case. Most somatic models do not endorse or require clients to remember or articulate traumatic memories (Ogden & Fisher, 2015; Rothschild, 2003). The belief is that the body can heal in ways that do not include or require language processing skills.

Body Awareness

Employing body awareness is a practical tool for all stages of trauma therapy. Body awareness is defined as "a subjective, phenomenological aspect of proprioception and interoception that enters conscious awareness and is modifiable by mental processes, including attention, interpretation, appraisal, beliefs, memories, conditioning, attitudes and affect" (Fujino, 2016, p. 249). The goal of building body awareness is important for two key reasons: 1) to

recognize and control hyperarousal, and 2) to be able to separate the past from the present moment. Helping a client increase awareness of the state of their body is the foundational key to developing internal resources and increasing the ability to be aware of emotions.

Some of the population of complex trauma sufferers may not be able to feel or identify any body sensations or may not have the vocabulary to describe what they are feeling. Others still will be so disconnected from their bodies that they are unable to answer questions about sensations at all. The clinical term for this is *alexithymia*. Therapists can help to guide increased awareness of body sensations so that clients can begin to locate and distinguish them in their bodies. This intervention can be done by asking specific questions. Depending on comfort level, either exteroceptive questions can be used, such as asking if the temperature in the room is acceptable, or if they are thirsty. Exteroceptive awareness originates from stimuli outside of the body, such as touch, taste, smell, sound, and sight. These questions may be less threatening than asking if they can articulate the sensation in their stomach or identify where their breath travels. Those are examples of interoceptive questions. Interoceptive awareness originates from stimuli inside of the body, such as connective tissue, muscles, and viscera. However, all these investigations are building blocks towards increasing emotional intelligence.

Individuals with trauma histories often come to identify body sensations with danger through the earlier discussed concept of somatic markers of emotion. Regularly, clients with anxiety and panic attacks are scared to feel sensations, even if they are otherwise considered pleasant. A therapeutic goal may be to distinguish safe and dangerous sensations from each other. Clients can be introduced (or reintroduced) to the helpful functions of sensations (Ogden, 2013). Levine (2010) explained that through graduated training, individuals could come to realize that they do not need to be afraid to feel sensations. One example of bridging this

connection is to intersperse the discussion with questions about what the client is aware of in their bodies at that moment. Over time, a gradual accumulation of associating bodily states with emotions can build the repertoire of familiar states. It is also a possibility to externalize the experience by asking what someone else might be feeling in the same circumstance. This externalization is a titrated method to introduce the concept of increasing awareness of body sensations without the pressure to look inward before the client is ready.

Present Moment Focus

Somatic practitioners believe that therapeutic work focused in the present moment has the most significant potential power for change. Ogden and Fisher (2015) explained this importance when they stated, "although telling "the story" provides crucial information about the client's past and current life experience, treatment must address the *here-and-now experience* of the traumatic past, rather than its content or narrative, in order to challenge and transform procedural learning" (p. 391). Procedural learning refers to the acquisition of motor skills, habits, and certain types of cognitive abilities over time. It is typically inaccessible to conscious recollection. This procedural learning is manifested in present-time physical and mental tendencies, which can be explored and altered in the therapeutic relationship.

It has been established that focusing on the body facilitates the separation of past from present (Ogden & Fisher, 2015; Rothschild, 2000). This mindful awareness can facilitate what is referred to as dual awareness. Ogden & Fisher (2015) define dual awareness as "to experience a state-specific memory, to a degree, while remaining rooted in the here and now by being mindful of one's internal reactions and aware of the surroundings" (p. 774). Dual-awareness is vital in trauma therapy, as the draw into the past can be strong, and the consequence of focusing on the past is the body staying in a hypervigilant state. Learning how to observe present moment

experiences mindfully can assist in regulating arousal while also mediating perceptions that the traumatic event is in the past. Somatic therapists dissuade clients from becoming caught up in the verbal narrative of past experiences and instead steer towards a narrower focus of the clients felt experience at that moment as they are discussing past or present difficulties. With this present moment's attention, they can discover the procedural responses that accompany these narratives. The goal is to become curious about the experience without reliving it.

Fight, Flight, and Freeze Responses

Trauma symptoms are said to originate from primitive biological processes (Levine, 1997). When a threat is sensed, an instinctual system of defence marshals the options of fight, flight, or freeze. Universally, if mammals are in a situation that requires aggression, the fight response will be utilized. If fight is assessed to be a losing battle, the flight response will take over. When neither fight or flight are viable options, the third defence is freezing or immobility. Often in cases of complex early trauma, the situation is such that no one was available to help and fighting back or running away was not possible or would make the ordeal even worse. The goal in nature of the freeze response is to escape death or serious harm, or worst-case scenario, provide an anesthetic mechanism to minimize the pain of death. These are unconscious decisions made in the limbic and reptilian brain, not in the realm of the neocortex (Levine, 1997; Porges, 2011). In relational trauma, the escape is often to shut-down in order to bear the unbearable. The psychological counterpart to the physiological state of freeze is dissociation.

Levine (2010) posits that the ability to go into and come out of the freeze response is considered the key to avoiding or overcoming the devastating impact of trauma. This shifting is a foundational concept from *somatic experiencing*, a form of somatic therapy developed by Peter Levine (1997;2010). He looked to wild animals for an explanation, as they are known to shake

and pass through the immobility response after a traumatic incident. It is believed that in doing so, they become mobile and functional again and rarely develop adverse symptoms. The other scenario is that a combination of terror, rage, and overwhelming helplessness builds up in the nervous system resulting in frozen energy unable to discharge, which creates the dysregulated states seen in trauma sufferers. The difference in humans is the influence of the neocortex's attempt to override instinctual responses.

The somatic and psychological implications of an unresolved freeze response are the continuation of cycles of fear and immobility, which form the core symptoms of trauma. Over time, and with each successive experience of freezing, the immobility response becomes chronic and intensifies. The signs of trauma are actually the mechanisms which are trying to contain it and regulate the nervous system. They can be seen as the "circuit breakers," which relieve some pressure from the system (Levine, 1997, p. 106). Without them, the system could overload. Any functions regulated by the lower reptilian brain can become maladaptive in an effort to contain the frozen energy that has been mobilized for survival purposes.

Somatic therapy focuses on the biological energies underlying the fight, flight, and freeze responses. The key is to work gradually and incrementally to move out of the trauma response so as not to overwhelm the system. Too much pressure on the system will reinforce the defensive mechanisms that are already mobilized. Accessing and renegotiating the freeze response through the felt sense requires a technical understanding that is beyond the scope of this paper. However, in attending to this primitive process in somatic therapy, the connection to non-human animals and what humans can learn from them is highlighted. Levine (1997) summarized this when he stated:

One of the difficulties in treating trauma has been the undue focus on the content of an event that has engendered trauma. Trauma sufferers tend to identify themselves as survivors rather than as animals with an instinctual power to heal. The animal's ability to rebound from a threat can serve as a model for humans. It gives us a direction that may point the way to human's innate healing capacities. We must pay attention to our animal nature to find the instinctive strategies needed to release us from trauma's debilitating effects. (p. 98)

The Window of Tolerance

People with unresolved trauma-related symptoms often oscillate between states of hyperarousal (experiencing too much activation) and hypoarousal (too little activation) as they struggle with an easily and rapidly mobilized autonomic nervous system. Over time these states occur not only in response to threatening events but also in anticipation of them (Corrigan et al., 2010). When in a state of hyperarousal, it becomes difficult to process information, and it is easy to become overwhelmed with intrusive affect and sensations. This state is often experienced by feelings of numbing, emptiness, and an overall slowing or even a state of paralysis (van der Hart, 2004). These experiences of chronic dysregulation that commonly accompany early trauma are often triggered by almost any stimulus that challenges the system.

One model for understanding and interpreting responses to experiences, and specifically the fluctuations that can occur unpredictably and quickly, is called the *window of tolerance*. The term was coined by Dan Siegel (1999) to describe the optimal window within which a response to a stimulus is enough to successfully thwart real or perceived danger without becoming overly aroused and then able to settle naturally (Kain & Terrell, 2018). The window of tolerance is also useful for expressing the range in the autonomic nervous system that is correlated to well-being,

as well as providing a visual tool for teaching awareness of states. The model is used in somatic therapy because it gives clinicians the vernacular to understand and teach the consequences of chronically living outside of a balanced state of regulation. Kain and Terrell (2018) posit that viewing somatic responses through the window of tolerance model is useful psychoeducation and can improve levels of self-compassion for their experiences.

There are three general zones of arousal delineated in the window of tolerance model. It is often associated with a diagram where the middle area represents the optimal arousal zone or the window of tolerance. When in this state, social engagement is possible. It is often accompanied by the ability to feel connected to others, curious, safe, playful, aware, and grounded. Hyperarousal exists above the window of tolerance and is associated with the fight or flight urge, hypervigilance, feeling unsafe, overwhelmed, angry, defensive, impulsive, reactive, and constricted. Hypoarousal exists below the window of tolerance and is characterized by disconnection, immobility, passivity, collapse, flat affect, and low energy. The hyper and hypoarousal zones are associated with survival physiology and are where most individuals who suffer from complex trauma chronically exist.

A common goal in somatic therapy is to support clients to expand their window of tolerance and find ways to increase their ability to exist within a healthy window of tolerance. People with a broader window can cope with greater extremes of arousal and are said to have a higher threshold of response, which allows them to process and integrate complex information more easily. As described in previous chapters, trauma therapy occurs in a staged model. Focusing on expanding the window of tolerance would be a required first phase foundational goal, as processing traumatic experiences requires the nervous system to be in an optimal arousal zone (Ogden et al., 2006).

Polyvagal Theory

A similar, though arguably more sophisticated model for understanding the autonomic nervous system is polyvagal theory, which purports that the function of the nervous system can be more accurately described in terms of a hierarchy of responses instead of in terms of balance, as in the window of tolerance. In simplified terms, the window of tolerance suggests the range of optimal functioning is a balancing act between the sympathetic and parasympathetic systems that make up the autonomic nervous system (Siegel, 1999). Polyvagal theory identifies a third component within the parasympathetic system, the ventral vagal system, which essentially regulates the other two systems. Thus, polyvagal theory appears to provide a more nuanced understanding of how mammals respond to threat. The following section provides an initial framework that is helpful in somatic trauma therapy in order to assist with the modulation of arousal.

Relevance

Polyvagal theory provides several insights into the impact of physiological state on behavioural and psychological experiences (Porges, 1995; 2011). Specifically, it can help to understand the development of social engagement abilities, perceptions of safety and danger, and the roots of self-regulation. These processes occur within the autonomic nervous system, which has the responsibility of regulating involuntary bodily functions such as blood flow, heartbeat, breathing, and digestion. Prior to the introduction of polyvagal theory, the autonomic nervous system was regarded as a two-branch system consisting of calming and activating pathways. Porges (2011) identified that a third type of nervous system response existed, referred to as the social engagement system. This third branch provides an alternate avenue for slowing mammalian physiology within the parasympathetic system.

Polyvagal theory is named as such to include several features of the theory. Polyvagal theory is named for the vagus nerve, which comes from the Latin word *vagary*, meaning "wanderer." The vagus is the longest cranial nerve and 'wanders' from the brain stem to the heart, stomach, and face. It has two distinct pathways, hence the term "polyvagal." These are the dorsal vagus and the ventral vagus. The dorsal vagus is the oldest part of the autonomic nervous system, and it affects the organs beneath the diaphragm. It has more primitive capabilities and is associated with the freeze response. The ventral vagus is the newest part of the system, which is only found in mammals, runs through the areas above, namely the heart, lungs, and facial nerves. The ventral vagus influences heart rate and blood pressure and support the more complex activities of social engagement.

Both the dorsal and ventral pathways are capable of slowing mammalian physiology. They make up what is known as the parasympathetic branch of the autonomic nervous system, which can be thought of as the braking system for regulation. The ventral vagus responds to threats first via social behaviours, appeasement, submission, or negotiation (Dana, 2018). If those strategies do not work or are not available, the active threat response of fight-or-flight will engage, by way of the third pathway available described in the next paragraph. If active efforts do not successfully ward off the threat, the body will move into a frozen state, numbed from pain and immobilized, which is caused by the dorsal vagus nerve. From the lens of interpersonal neurobiology, the ventral vagal branch corresponds to the window of tolerance, and the dorsal vagal branch resembles the continuum of hypoarousal (Siegel, 2010).

The third pathway is the sympathetic branch of the autonomic nervous system. This branch is responsible for the preparation of activity, whether it be exercise, play, or responding to threats to survival. The fight or flight responses are governed through this platform. The

sympathetic pathway activates mobilization, which increases heart rate, breathing and arousal. This increase corresponds with a decrease in other physiological processes like digestion and salivation, as well as a decrease in the feeling of safety and ability for social engagement. While the parasympathetic branch is the "brake," the sympathetic branch can be seen as the "gas." From the lens of interpersonal neurobiology, this pathway resembles the continuum of hyperarousal as it leaves the window of tolerance (Siegel, 2010).

Since polyvagal theory emerged in 1995, there has been a great deal of interest in the clinical applications of the theory. It is relevant in the field of somatic psychology and equine-facilitated therapy as it provides a unique lens to view mammalian interactions. This lens can help to increase awareness of the underlying processes that shape the experiences of daily living, specifically on "the science of connection" (Porges, 2011). In the case of trauma therapy, understanding how the autonomic nervous system can be reshaped from patterns of protection, quieting those protective responses, and moving towards increasing the social engagement system, can provide hope for those suffering. The following section will give a brief introduction to the main concepts as they apply to traumatology and can be integrated into equine-facilitated therapy.

History and Development

Polyvagal theory was introduced in 1995 by neuroscientist Dr. Stephen Porges in an article detailing his research on how mammals had evolved in an environment where survival depended on their ability to down-regulate states of defence with states of trust and safety that supported cooperative behaviour and health (Porges, 1995). Over time and through subsequent explorations, it became evident that there were clinical applications for humans, which provided plausible neurophysiological reasons for symptoms of trauma. As summarized by Dana (2018)

"the theory provided an understanding of how, after experiencing life threat, their neural reactions were retuned towards a defensive bias, and they lost the resilience to return to a state of safety" (p. xi). Although Porges did not anticipate the interest his theory would garner in the field of psychology, therapists quickly saw that just the explanatory power it provided was beneficial. The theory provided a language to help trauma survivors reshape their existing narrative and learn to have more compassion for themselves as they understood more clearly the reasons for why they often felt the way they did (Dana, 2018).

Polyvagal theory uncovered that the response patterns of trauma survivors were not conscious choices, but instead were automatic energies working unconsciously in the interest of protection. This new information precipitated acceptance that trauma responses were intelligent adaptations gone awry in the intention of survival. The theory stands in contrast to traditional psychotherapeutic views, which hold that addressing cognition is the gold standard of trauma therapy. From this shifted paradigm of "story follows state," or brain follows the body, interventions to engage the resources of the autonomic nervous system have made their way into therapeutic approaches. Despite the benefits of this understanding and the commonality of autonomic responses in horses and humans (and in all mammals), polyvagal theory has moved into the vernacular of trauma theory. Still, it has only just begun to make an imprint in the field of equine-facilitated therapy.

Organizing Principles

There are three main principles that are the foundational concepts of polyvagal theory. They are hierarchy, neuroception and co-regulation. Hierarchy refers to the three pathways of response in the autonomic nervous system that engages in evolutionary order from oldest to newest. They are the dorsal vagus (immobilization), the sympathetic nervous system

(mobilization), and the ventral vagus (the social engagement system). The hierarchy of the autonomic nervous system can be translated for clarity into the form of a ladder. At the top of the ladder is the social engagement system of the ventral vagal pathway. The highest rungs on the ladder signify a state of healthy regulation, well-being, and connection. Moving down the ladder, the sympathetic branch of the autonomic nervous system is activated. The experience of fight or flight is primed, arousal increases and the need for self-protection is felt. At the bottom of the ladder exists the oldest evolutionary pathway of response. This ancient pathway is the dorsal vagus of the parasympathetic branch. When fight or flight is not available, the system moves into shutdown, immobilization, or dissociation. Dana (2018), who wrote the seminal book for therapists on the clinical applications of polyvagal theory, uses the ladder analogy as a user-friendly learning tool. She explained that well-being could be experienced when the three parts of the autonomic nervous system work together by running the system efficiently, sounding the alarm as needed and allowing for rest and regular connection with self and others.

The second principle that makes up the foundation of polyvagal theory is neuroception. Neuroception is a term coined by Porges (2011) to describe the ways the autonomic nervous system unconsciously detects and responds to cues of safety and danger in the environment. Porges (2004) states that neuroception describes how neural circuits distinguish whether situations or people are safe, dangerous, or life-threatening" (p. 19). The precursor to healthy neuroception is the ability to differentiate between safety and threat. To make that distinction, the individual needs to have an embodied sense of safety, which is derived from early care providers who help children explore their environments and co-regulate their responses. These experiences create an ongoing feedback loop which hones neuroception. If there is complex trauma,

neuroception is often tuned to danger and very limited in the ability to have an experience of safety.

Co-regulation is part of the neurosequential process by which a foundation of safety can be created. It is seen as the precursor to forming connections, essentially the "how" of attachment theory. There is a constant flow of reciprocal energy that works to regulate autonomic states so that mammals can move into connection and create relationships. The lack of this regulatory capacity is understood to be a consequence of traumatic stress. When nervous systems reach out for connection and co-regulation and are chronically sent cues of missattunement or danger, they become primed for protection. Without connection, healthy functioning in numerous physiological, behavioural and social domains are impacted. Without resolution, a pattern of chronically active defences negatively impacts a person's ability to create and maintain relationships. Without the social support of relationships, a feedback loop of protection develops where connection is needed. The cycle continues through an individual's lifespan as they struggle with a desire for connection and a nervous system that is not wired for social engagement.

A state of chronic or foundational dysregulation occurs when access to safety is so lacking that it becomes a pervasive state. Existing in this state leads to filtering the environment without awareness of doing so, continually looking for threats. As is explained in the following passage, this miscalibration of the autonomic nervous system has far-reaching implications for those suffering from it:

We constantly feel under threat, and we respond accordingly – perhaps with aggression – and those around us react to our aggression and confirm our experiences of being under threat. Or we drop into freeze mode and become numb to or dismissive of offers of

connection and support, which is soon withdrawn because we failed to embrace it. (Kain & Terrell, 2018, p. 80)

Proponents of utilizing a polyvagal lens in therapy suggest that clients can be helped by learning to recognize response patterns formed from traumatic experiences and find new ways to navigate their autonomic system (Dana, 2018; Schlote, 2018). Though this approach is much more involved than can be summarized here, the basic tenets include

1. Recognition by the clinician of the autonomic state the client is in,
2. viewing this state as an intelligent adaptive survival response,
3. working with the client to co-regulate into a ventral vagal state, and
4. using the therapeutic relationship to assist the client in creating new stories that are just as true and also incorporate information their autonomic nervous systems were not primed to be aware of earlier on.

Limits and Contraindications

It has been argued that somatic therapies on their own are likely insufficient, and best practice would suggest that the integration of all three levels of processing (somatic, emotional, and cognitive) are essential for recovery. Ogden et al., (2000) stated:

it is important for the therapist to observe the client's processing of information on each of these three related but distinct levels of experience, differentiate which level of processing will most successfully support the integration of traumatic experience in any moment of therapy, and apply specific techniques that facilitate processing at that particular level. Such an approach ultimately fosters "holistic" processing where all three levels will operate synergistically. (p. 151)

The therapist, therefore, must have a clear understanding of the two directions of information flow and an awareness of the client's information processing tendencies at any particular time in the therapy session. Techniques that facilitate processing must match with the level of experience the client is currently working within. For example, a therapist may choose to use logic to help a client recognize feeling safe or address the emotional impact of not feeling safe in childhood. Yet another option is to focus on the somatic reactions that accompany the experience of not feeling safe. This could be identifying and describing physical trembling, accelerated heart rate and other movement impulses until they feel resolved. The key is in the therapist's ability to recognize and attend to the appropriate level of processing and not rely solely on somatic interventions.

Top-down strategies are utilized to support sensorimotor processing rather than just managing the disturbing and sometimes overwhelming bottom-up processes. Conscious, intentional use of cognitive strategies can modulate the degree of arousal a client feels and offer management strategies, but likely will not adequately address the entire problem. An example might be encouraging distracting behaviour such as watching television or going for a run. This distraction is a cognitive decision to undertake an activity that sublimates the level of distress a person is feeling. Mindfully tracking sensations is a cognitive process and is a core component of most somatic therapies.

Summary

Somatic therapy emphasizes the development of resources within individuals with the goal of increased regulation of affect and moving out of the fight/flight/freeze response. This increase allows for access to higher cognitive levels of processing, which are more flexible and socially appropriate. Facilitating awareness of the body has a long history in psychotherapy and

the treatment of trauma. Resolving symptoms through the gradual experience of sensations in a safe and comfortable manner was expressed as good practice by Pierre Janet in the early 1900s, among other well-known psychotherapists. The core concepts of somatic therapy involve integrating knowledge of the hierarchical processing mechanisms of the brain while attending to the body's internal senses. This is done with the goal of regulating arousal and facilitating the separation of past from the present. Understanding the origins of trauma symptoms existing within the biological processes of animals is essential. Additionally, working to renegotiate the freeze response can ultimately resolve the stuck energies from traumatic experiences. The insight gained from the window of tolerance model and polyvagal theory provide a vehicle for somatic therapists to understand the intricacies of the autonomic nervous system, as well as a way to teach it to clients. From this psychoeducation, self-compassion can increase along with the awareness of the physiological origins of dysregulation and its corresponding symptoms. Somatic therapies also incorporate top-down methods. It is essential to work with clients in whatever way is most beneficial and to approach every person from the perspective of the connection between mind, body, and spirit.

Chapter 4 – Somatically Based EFP Interventions

This chapter outlines several fundamental principles of EFP filtered through a somatic lens. However, the concepts illustrated are entirely able to be integrated with cognitive and emotion-based interventions. This section's goal is to illustrate some of the clinical applications of the somatic EFP principles presented in earlier chapters of this thesis. As a student and intern at Generation Farms in Nanaimo B.C, a centre for equine-facilitated wellness, many of these approaches are grounded in the author's experience as she worked towards certification with the Professional Association of Equine Facilitated Wellness as a Mental Health Practitioner.

Core Concepts

EFP is intended to offer emotionally and physically safe experiences with horses to increase self-regulation capacities, improve inter and intra-personal relationships, build self-awareness, identify patterns of behaviour that no longer serve a healthy purpose, develop psychological and social skills, and address unique therapeutic goals. This may include healing from traumatic experiences, but such a background is not necessary for a client to benefit from EFP. These experiences are facilitated by trained professionals and may include observing horses up close and at a distance, meeting with horses at liberty, meeting a horse on lead-line, haltering, touching, grooming, leading, and incorporating other materials to represent metaphorical aspects of a client's inner and outer world. Some practitioners engage in mounted experiences, but this is not required. The experiences are relational and focused on building the client's resources. EFP is not focused on increasing horsemanship skills; however, teaching basics about equine safety, communication, and behaviour are necessary to mitigate the client's risk.

Creating a Container

The therapist's ultimate responsibility is to create an environment where all beings present can feel physically, emotionally, and spiritually safe (Marshall & Pelletier, 2013). Essentially, providing an environment or a "container," which is a metaphor for a trusting relationship. Schmelzer (2018) compares the container to a secure base from attachment theory, which depicts the need to provide a balance of reasonable boundaries as well as room for growth. To provide this to another being, the therapist must have a strong sense of self and awareness of their own body, emotions, and limitations.

Creating a container is a ubiquitous concept in psychotherapy. However, there is an added element in EFP, as the therapist is responsible for holding a safe container for both the client and the horse(s). This added element means that the therapist must be attuned to both the client's and the horse's window of tolerance during the session. The therapist must balance the needs of the client and the horse and step in if either of them enter states of hyper or hypoarousal. An added element is that the therapist must also attend to any of her feelings of overwhelm and redirect or slow down a session if needed.

Body Awareness

Whether aware of it or not, the body registers environmental information continuously and adapts as needed. Body awareness is an essential step towards increasing social and emotional intelligence. The wisdom of the body can convey what *is* happening, not what *should* or *should not* be happening. Kohanov (2013) suggested that when thinking about scanning the body for information, "you do *not* want to "relax out of" or adjust any sensations or postures on

purpose. Rather, notice how your body changes according to environmental influences, including encounters with other people" (p. 283).

Body scans are an information-gathering technique used to assess the body's current state. They are a core practice of somatic EFP. As outlined in previous chapters, trauma can disconnect people from their body and learning to track body sensations is a vital part of healing. Body scans are also used to promote grounding and ensure that it is safe for the client to be with the horse(s) (Williams, 2018). The process of doing a body scan involves the facilitator using their voice to guide the client in focusing on senses and sensations being experienced in that moment. A good rule is to start with noticing the feet on the ground, which is less likely than the viscera to be a triggering point. Attending to the external senses can also be less threatening. An example might be "feel the sun on your face" or "the wind on your skin." While doing the body scan, it is important to remind the client that the goal is to notice and not change anything. The facilitator can choose to move attention upward in a safe way, often going from feet to head and back down again. There are many different resources for learning about body scans in EFP (Kohanov, 2013; Levine, 2010; Shambo, 2013).

A more general form of awareness of communication can begin when a client arrives at the barn. The therapist can garner useful information by observing clients as they arrive. Non-verbal messages are transmitted through gait, physical form, energy levels, eye contact, greetings, and engagement. Observing how they interact with the horses and how the horses respond to their presence is informative.

Grounding

Grounding is a practice that can assist clients in accessing the resources available within their bodies. Levine (2005) stated that "in trauma, people lose their ground, so an important part of healing is learning to reestablish ground" (p. 42). He depicts this in a both literal and figurative way, as reestablishing a centre of gravity and connection to the earth as well as creating an internal sense of safety that makes it more difficult to be swept away by thoughts, emotions, and sensations. Grounding involves being in the present moment and engaging with something tactile to secure that foundation. In EFP some examples could be noticing the feel of your feet in your shoes and on the ground, touching a horse's mane or coat, leaning or pushing on a fence to feel its sturdiness, or feeling the breath of a horse on your skin (Marshall & Pelletier, 2013). It is possible to get a sense of groundedness merely by watching calm horses while paying attention to the rhythm of their breathing and other non-verbal cues, such as a lowered head and soft eyes.

Present Moment Focus

In somatic therapy, the precursor to having dual-awareness is the ability to be present moment focused (Rothschild, 2000). Additionally, learning to observe present moment experiences mindfully is a crucial component of regulating arousal. The body is comprised of two major sensory systems: the exteroceptive system, involving the 5 senses that attend to external stimuli, and the interoceptive system, or the internal sense, attending to internal stimuli (Bannerman, 2017). Connecting to the internal sense must be done safely and incrementally. Clients who suffer from dysregulation and trauma symptoms may find that connecting to their internal sense is too risky before they can increase their window of tolerance through other

foundational strategies. The therapist can instead begin with creating a safe container and building resources. Rothschild (2003) stated that a key element in somatic therapy is first learning to "put on the brakes" to modulate arousal levels to improve regulation. An incremental strategy is to attend to the exteroceptive system first by incorporating the five senses. Inviting the client to notice what the horses are doing or smell the grass in the pasture are ways to engage present moment exteroceptive sensory stimuli. Moving and experiencing the natural setting can provide numerous opportunities to engage the senses of smell, taste, touch, sound and sight as well as to track bodily sensations.

Embodying Resources

In the context of somatic EFP, resources refer to internal capacities for strength and resilience. Resourcing is a tool clients can use to call up their EFP experiences when they need support to shift states in their daily lives. The process of embodying resources is in the creation of a felt sense or positive feeling the client can call on in their daily lives. It can also be accompanied by an image, symbol, or transitional object that can remind of this felt sense.

To integrate changes, clients need to practice new experiences. The therapist can help reinforce helpful or profound moments in the session to embody a particularly positive aspect. When the client is away from the barn, calling on a favourite horse, smell or sound may be enough to assist with modulating arousal and preventing a shift out of the window of tolerance. An example of this practice could be by inviting the client to attend to a positive experience during a session and put words and a felt sense to it. The therapist could set up a resource opportunity by stating, "close your eyes and recall the sense of standing in Raddler's stall feeling safe and connected. Remember the feel of his coat as you stroked him, and he softened. When

you are feeling anxious this week, see if you can bring back this memory to help you get to a calmer state".

Emotional Congruence

Being emotionally congruent means having your feelings match your actions and behaviour. Ideally, effective communication relies on facial expression, tone of voice, and body language to match the message. It would not make sense to articulate anger while laughing at the same time. Another way to understand it may be to imagine walking into a room and, despite not hearing the conversation, feeling the tension between two people, and just knowing without being told that they were arguing. It is possible to pick up the energy people transmit into the environment.

Contradictory energy is very confusing for horses. As a prey species, they are entirely dependent on body language and tones to know if they are safe. Horses will respond to incongruence by becoming anxious and agitated. Buzel (2016) stated it simply in the following passage:

If you are aware and accepting of what you're feeling, the horse will enjoy your company. If, instead, you are acting as if everything is hunky-dory when in truth you are falling apart, the horse will get confused by all the different messages and take off. Horses can help us get honest about what we are actually feeling. (p. 28)

Horses do not put judgements on emotions. They are as comfortable with joy as they are with sadness, as long as the sentiment is clear and honestly communicated.

Shifting Focus

An important somatic skill is learning how to pendulate between thoughts that cause worry and fear, and thoughts that are calming and reassuring. Pendulating, or oscillating, "involves directing the client to repeatedly and mindfully orient back and forth between calm or resourced body areas, experiences, or sensations and areas of experiences that are painful or uncomfortable" (Ogden et al., 2006, p. 217). This technique can be done both strategically and intentionally for trauma processing, and it can be utilized as a method for helping the client reenter their window of tolerance at any time during a session. Remembering that most individuals will have unregulated nervous systems, it is essential to be attuned to the client's arousal states and gauge when a shift in focus is necessary.

Window of Tolerance

As previously discussed, the window of tolerance is a mechanism for providing the language of internal affective states. During an EFP session, clients are presented with opportunities to observe the impact of their arousal state on another being with the dual-awareness of their own arousal state. With this in mind, self-regulating strategies can be introduced to experiment with changes in the equine's arousal and behaviours. An added benefit is that there are often multiple times during a session to practice this skill. Jenkins (2019) stated that "a client's window of tolerance for any affect will not widen without calm being created and actively revisited, over and over, first and foremost and throughout treatment" (p. 45). Therefore, experiencing relational affect regulation in an EFP setting can help the client to practice improving modulation in a non-threatening way. For example, a client leading a horse through an obstacle would need to work on staying calm and helping to reduce stress in the horse.

An excellent way to demonstrate the concept of the window of tolerance is by working with a horse at liberty in the round pen and allowing for different levels of activation. This should always be done with a horse who is grounded enough to not be harmed by moving through different states. The horse may go from disengaged (looking away, eating) to connecting to the human and being calm and curious, to agitated (head high, ears pinned, faster movements) and back down again. The client can observe the horse's natural activation-deactivation cycles as a way to begin to internalize their own experiences with arousal states. Over time, the goal would be to work with the client to safely begin to expand their window of tolerance using different types of equine activities.

Interrupting Stories

The result of successful therapy is the trauma's integration into the past of the individual. As Ogden et al. (2006) described, there should be a sense of:

yes, this did happen, and it greatly affected me for many years. But now I have experienced it in my body without being overwhelmed by it and, in fact, I feel empowered in relation to it. It is in the past now, and I can finally move on. (p. 295)

However, somatic trauma therapists believe that successful integration comes from working somatically and attending to non-verbal memory. Often when clients are wanting to tell their story before acquiring the feeling of safety, which is the main component of the first phase of therapy, it leads to a re-experiencing of the trauma and subsequent dysregulation. This pattern is a complex process because a state of dysregulation is often considered commonplace; thus, they may be unaware. It becomes essential that the therapist is skilled at interrupting stories of traumatic events and bringing the client back into the present moment.

Avoiding Pathology

The setting for EFP is inherently unique and can provide the client with a sense of normalcy. Many people who come to try EFP have already had many experiences with traditional office-based counselling and have grown weary of the lack of success they have had (Naste et al., 2017). At the barn, clients meet with a therapist in a casual setting where there may be others present, such as workers or lesson students, which provides a type of anonymity for those who feel a stigma about being a counselling client. It becomes evident quickly that the horses do not make judgements about histories or diagnoses. They respond to everyone based on their experience at the moment, whether it is counsellor or client. Some clients enjoy learning about horses with their own troubling histories, as this can help to strengthen the connection they may feel. Additionally, when a client can be congruent and regulated enough for a horse to want to engage, it can invoke a feeling of increased self-confidence and mastery.

Staying Out of the Way

An important but difficult challenge for most therapists is in stepping back and allowing the horse and client an opportunity to explore. Marshall and Pelletier (2013) offer the wisdom that "the horse will do what you need him to do if you can leave him to it" (p.52). Stepping back and being flexible to what is created between the horse and client is harder than it might seem. The therapist may feel the need to fill the space with information, interpretations, and activities, especially when they are less experienced. The art is knowing when to step in and make an offering and when to allow the equine co-facilitator to take the lead.

Experiences with equines can provide ample opportunity to witness the non-verbal signals used for communication. Therapists can help clients recognize and make sense of the

signals, such as a horse positioning his ears in a certain way or pawing at the ground. They can inquire about the client's interpretation of the signals and explore possible reasons for the equine's behaviours. However, it is essential to allow space for the client's story, which can provide valuable insight for the therapist into the client's worldview and how they see their impact on those around them. Pike (2009) summarized the concept of "allowing" in the following passage:

The beauty of working with the horses is that it is not the facilitator's job to control outcome, manipulate experiences, or become goal-oriented. Instead, the facilitator holds a space that allows the horse and human to work together to create their own dynamic, often only weaving in small comments and questions for guidance. As a result, sometimes something beyond and much greater than what the human ego can create transpires naturally in the session. (p. 119)

Reflective/Active/Experiential Sessions

All EFP sessions can be categorized as either primarily experiential, active, or reflective. During experiential work, a specific task is assigned in order to garner insight and self-awareness for the human. The rationale is that given an unfamiliar task, people will tend to respond in ways familiar to them, and those actions can be brought into conscious awareness. The horse is used as more of a tool to create a reaction. The criticism of this type of approach is that it does not incorporate the equine's unique perspectives, and there are likely similar ways to induce the same responses without having a horse present (Hallberg, 2018; Marshall & Pelletier, 2013).

In active work, the horse and client engage in an activity that may not be as prescribed as in experiential sessions. Active work might include learning horsemanship skills, round penning

and leading. The goal is often to learn and practice leadership skills, self-awareness, and assertiveness (Marshall & Pelletier, 2013). Active work may be a good choice for clients who cannot manage slow, reflective work due to a highly activated nervous system response. An active experience can be enhanced by inviting the client to include some of the core concepts described earlier in the chapter, such as body awareness, including arousal levels and sensations, intention, pauses, and breathwork.

Reflective work is quieter and often more in-depth work with a strong focus on the body. Sessions are more open-ended to allow events to unfold more organically. Usually, a loose horse is used in a safely contained area like a round-pen or paddock. The horse must be capable of expressing opinions and choices, which will contribute to the client's feedback. Dunning (2017) suggested that reflective work is the true strength of EFP. She encouraged practitioners to move away from completing tasks and activities that focus on the rational and logical brain systems and to allow clients to have one on one time and the opportunity to create a meaningful experience together.

Strategies for Conducting EFP

Structuring a Session

The therapist is responsible for matching clinical goals to suitable equine activities. Often clinicians newer to EFP tend to design activities that are too complex or time-consuming for the client and the length of the session. Over planning usually occurs because of concern of not keeping the client engaged (Deborah Marshall, personal communication, October 20, 2019). Hallberg (2018) stated that "for skilled mental health professionals, one simple activity like observing a horse or learning to touch a horse can produce weeks of therapeutic fodder" (p. 140).

Therefore, it is important to take time and care in planning sessions. It is equally important to be reflective and flexible in finding the correct pacing that balances engagement and regulation.

The length of an EFP session also needs to be adaptable. Length can be viewed from the perspective of therapeutic "dosing," where an effective dose means improvement of symptoms with few side effects. Fatigue and sensory overload are essential factors to consider, as clients may not be used to the outdoors and farm milieu. There is little definitive research currently available informing session length, frequency, and duration of treatment, however, Hallberg (2018) provided very general advice when she stated:

Given the state of therapeutic dosing and equine-assisted therapy, licensed professionals are urged to follow best practice guidelines for the specific clinical intervention they use, and carefully observe how their patients tolerate treatment. Based on these observations, professionals may make adjustments to session length, frequency, and duration. (p. 139)

In a study of practice patterns of EFP psychotherapists, Gresham (2014) concluded that therapists typically hold sessions that last approximately 55 minutes, and the average total number of sessions is ten.

Meet the Herd

A meet the herd experience is an excellent introductory exercise. It is a safe, non-threatening opportunity for clients to become acquainted with the horses and space in general. Best practice dictates that it is done across the fence but in an area where the clients can get close, and the horses have space and choice to move away. Additionally, having the horses away from grass or hay makes them more curious about the new humans. The goal of a meet the herd

exercise is not about making a connection with a particular horse. The instructions should emphasize personal observations, such as what the client notices about themselves and to be curious about their own and the horse's responses to movement or subtle changes. The therapist should always be present and monitoring for any issues. Afterwards, inviting clients to think about what they noticed in their body, what they observed in different horses, if there was a horse they were drawn to, and if there was any learning about themselves they could apply in situations where they were meeting new people (Marshall & Pelletier, 2013; Williams, 2018)

Grooming Sessions

A grooming session can provide many therapeutic opportunities. One example is in supporting the activation of the client's social engagement system (ventral vagal) and working with them to stay in their window of tolerance. Jenkins (2019) explained that many clients do not know how to access "calm" but that horses innately know how to be "relaxed and ready". As prey animals, horses can scale up and down their levels of activation without becoming traumatized, which makes them excellent teachers of this skill.

Polyvagal theory is a useful precursor in understanding this concept, as often what passes for a state of calm in complex trauma survivors is, in fact, a dorsal vagal response of shutdown or dissociation. To highlight the difference in these responses, the therapist can work with the client as they groom the horse to identify and describe the present experience of calm in the horse and then in the client. Teaching calm using horse psychology, the therapist could point out the lowered head, soft eyes, and slow breath. These examples can lead to an internal exploration of calm for the client, which may be contrasted with other times they have had a similar experience, or they may realize that previous experiences were more of a shutdown experience.

A further progression of the grooming experience of building a tolerance for calm could be in providing a resourcing experience. The therapist could invite the client to use a mental snapshot of this time to return to a state of calm. Additionally, the therapist can encourage the client to practice using their snapshot regularly to reinforce these new neuroceptive capacities (Jenkins, 2019).

Approach/Retreat

Approach and retreat exercises offer varying thresholds of intensity for the client to maneuver through while accessing co-regulation from the therapist and horse. For clients who have experienced trauma, the felt sense of safety and pleasure can be unfamiliar, and hyperarousal is their default state. Alternatively, the client may exist chronically in hypoarousal or dorsal vagal state and are unaware of threatening situations. Either way, neuroception is compromised, and the lack of felt sense in the body is critical to address in treatment.

As with all exercises, the therapist would lead the client through a body scan to gather information. If the client is working through fear and anxiety, using scaling terminology where zero signifies very comfortable and ten signifies terrified or intensely anxious, can be helpful. This scale can be used for quick check-ins throughout the exercise. The objective is to move in such a way that the scale stays below four. If the client rises above four, they can step back, pause, and use regulating strategies with the therapist's assistance. The goal is not to ultimately reach the horse but to learn to track sensations and titrate an experience in a controlled and safe way. Such an exercise provides possibilities for experimenting with allowing sensations to resolve completely so the client can experience safely moving through activation. It can also bring awareness to mobilizing active defences and providing choices in how to self-protect. In

accessing procedural memory and renegotiating, the client is provided a corrective emotional experience. Both experiments can increase the client's confidence in managing regulation.

Boundary Experiences

The need to set clear boundaries is crucial in horse culture. They are taught boundary lessons as foals by their mothers and then by their entire herd. Boundaries encompass important social rules such as who can be approached and how, what type of connection is acceptable, when to give space and who eats and drinks first. Consider a stampede of horses as they flee while they jockey for position, maneuver through obstacles, and keep just close enough to one another to stay safe in the herd without colliding. This synchronicity takes a keen awareness of physical boundaries.

In EFP, simply observing a herd set boundaries with each other as they negotiate for space, food and resources can be very informative. Ethologists have learned that leadership for horses is about who can move who (Rees, 2017). Horses set boundaries and move others by eye, head, neck and ear gestures or by moving and lifting a hind leg as well as other more assertive measures, but they will always begin with the least intrusive action and increase pressure as needed until a response is given (Marshall & Pelletier, 2013).

Learning to set a boundary with a horse by moving them away or creating space can empower clients who have experienced the relational boundary violations of complex trauma. Negotiating boundaries is done by setting an intention, both in body and mind and following through with congruent actions. In many cases of relational trauma, the victim was not able to set and enforce personal boundaries and were taught that they had no right to do so or if they did it

would be hurtful to others. These early boundary violations are why it is so important to locate the power and energy to set clear boundaries that are not aggressive and have them be honoured.

Some basic principles inform a simple, yet powerful, boundary exercise of horse/human connection taught to the author by Marshall & Pelletier (2018) at their facility, Generation Farms. The basic rule to follow is that if you approach the horse, it sets the boundary. If the horse approaches you, you set the boundary. This principle can be a guideline that informs all relationships. If the horse gives a "no" by turning its outside ear or eye away, slightly moving its head or shifting away from you, you pause, wait, and give space. The horse's response to having their boundary either respected or not will set the stage for the next step of the interaction. The client can regroup, debrief and get suggestions and then try again. Because the horse is non-judgmental and existing in that moment, they are usually willing to have the client try again.

Clients can also practice setting boundaries with a pushy horse and experiment with attending to their own and the horse's signals. Therapists can instruct on using phases of pressure to move the horse away or back the horse out of the client's space and maintain that distance. Or, learning to lead a horse while keeping the desired distance can also set a boundary. The facilitator can help to expand on the experience by asking questions such as "what do you notice?", "how do you know when it feels right?", or "how does this remind you of yourself in your current life situation?" to encourage internal exploration by the client.

Active Roundpenning

Active roundpenning is an exercise for clients to practice raising and lowering their arousal states sufficiently to encourage the horse to move and to slow down and stop. It can be a profound experience for those who struggle to regulate their emotions and affect. When clients

can modify their arousal levels, their energy shifts are mirrored back to them through the changes in the horse's behaviour. Often the power of influencing the horse provides a new experience for the client of being in control and an increased sense of competency.

Active roundpenning can be done by a client who has sufficient experience with a horse to move the horse around while simultaneously keeping themselves safe. The therapist can instruct the client on the use of focused energy, being congruent, being assertive (not aggressive) and conveying respectful leadership. Once the client has a foundational understanding of the exercise, they can be encouraged to experiment with different movements and directions while noticing if the horse stays in connection or not. Often when a horse and human engage in this type of exercise, it ends with what is known as "join-up," which is a type of bonding that forms when the human softens and quiets, and the horse approaches. Join-up can be a powerful way to build relationship, trust, and connection between the pair.

Play

Play is a form of exploration that can lead to new insights and an improved capacity to cope with stress (Ogden et al., 2006). Ogden goes on to state that "activating the client's play action system usefully challenges trauma-driven tendencies, especially immobilizing defenses, cognitive schemas of danger and/or worthlessness, and phobic responses to pleasurable sensations and positive affect" (p. 196). Generally, the emergence of the felt sense of playfulness suggests a decrease in defensive mechanisms and fosters a sense of well-being. The social engagement system of the ventral vagus is activated, and the client may experience positive affect.

Some examples of play in EFP could include running in a round pen or pasture pretending to be horses (horses should not be present at the time) or using jumps, hoops, or other equipment to engage with horses who are safe for such experiences. Numerous other games and activities could be incorporated into the farm milieu. Whether they directly include the horses is optional. The goal is for the clients to access their ventral vagal system and be able to experience lightness and laughter in a non-judgmental context. These experiences can create new procedural memories and opportunities for resourcing.

Summary

Equine-facilitated psychotherapy provides a plethora of opportunities to integrate somatically based interventions. It is essential for the therapist to be knowledgeable of the interpersonal neuroscience behind “playing” with horses and to be intentional in their use of those principles to achieve therapeutic goals. This does not mean that a strict adherence to a body-centred framework is necessitated. The best interventions will be flexible in their inclusion of both top-down and bottom-up approaches. The key can be learned from the horses, to be in the moment and, prepared with choices that are responsive and suit the context. Of primary importance is the need for regulation-informed approaches, as access to improved regulatory capacities will have a positive impact on many aspects of the lives of both humans and equines.

References

- Ainsworth, M. D. S. (1973). The development of infant-mother attachment. In B. Cardwell & H. Ricciuti (Eds.), *Review of child development research* (Vol. 3, pp. 1-94) Chicago: University of Chicago Press.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.
- American Society for the Prevention of Cruelty to Animals (ASPCA). (2016). *Five freedoms*. Retrieved from: https://www.aspcapro.org/sites/default/files/ASPCA_5Freedoms.pdf
- Asmundson, G. J. G., Thorisdottir, A. S., Roden-Foreman, J. W., Baird, S. O., Witcraft, S. M., Stein, A. T., ... Powers, M. B. (2018). A meta-analytic review of cognitive processing therapy for adults with posttraumatic stress disorder. *Cognitive Behaviour Therapy, 48*(1), 1–14.
- Bachi, K., Terkel, J., & Teichman, M. (2011). Equine-facilitated psychotherapy for at-risk adolescents: The influence on self-image, self-control and trust. *Clinical Child Psychology and Psychiatry, 17*(2), 298-312.
- Bachi, K. (2013). Application of attachment theory to equine-facilitated psychotherapy. *Journal of Contemporary Psychotherapy, 43*, 187-196.
- Bannerman, A. (2017). Resisting oppression: Body psychotherapy techniques to empower women. *Body, Movement and Dance in Psychotherapy, 12*(3), 185-194.
- Blaustein, M.E., & Kinniburgh, K.M. (2010). *Treating traumatic stress in children and adolescents: How to foster resilience through attachment, self-regulation, and competency*. New York, NY: The Guilford Press.
- Bowlby J. (1969). *Attachment. Attachment and loss: Vol. 1. Loss*. New York, NY: Basic Books.

- Brendtro, L, Mitchell, M, & McCall, H. (2009). *Deep brain learning: Pathways to potential with challenging youth*. Albion, MI: Starr Commonwealth.
- Bucharest Early Intervention Project (2017). *The Science of Neglect: The Persistent Absence of Responsive Care Disrupts the Developing Brain*.
<http://www.bucharestearlyinterventionproject.org/>
- Buck, P. Bean, N. & de Marco, K. (2017). Equine-assisted psychotherapy: An emerging trauma-informed intervention. *Advances in Social Work, 18*(1), 387-402.
- Burgon, H. (2011). ‘Queen of the world’: Experiences of ‘at-risk’ young people participating in equine-assisted learning/therapy. *Journal of Social Work Practice, 25*(2), 165-183.
- Buzel, A. (2016). *Beyond words: The healing power of horses. Bridging the worlds of equine assisted therapy and psychotherapy*. Bloomington, IN: AuthorHouse.
- Courtosi, C. (2004). Complex trauma, complex reactions: Assessment and treatment. *Psychotherapy: Theory, Research, Practice, & Policy, 41*(4), 412-425.
- Corrigan, F., Fisher, J, & Nutt, D. (2010) Autonomic dysregulation and the window of tolerance model of the effects of complex emotional trauma. *Journal of Psychopharmacology, 0*(0), 1-9.
- Cresswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th Edition). Los Angeles, CA: Sage Publications.
- Damasio, A. (1999). *The feeling of what happens*. New York, NY: Harcourt Press.
- Dana, D. (2018). *The polyvagal theory in therapy: Engaging the rhythm of regulation*. New York, NY: W.W. Norton & Company.
- Dunning, A. (2017). *The horse leads the way: Honoring the true role of the horse in equine facilitated practice*. Oxford, UK: YouCaxton Publications.

- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V.,...Marks, J. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245-258.
- Fujino, H. (2016). Body awareness and mental health: A body psychotherapy case study. *Body, Movement and Dance in Psychotherapy* 11(4), 249-262.
- Granados, A. & Agis, I. (2011). Why children with special needs feel better with hippotherapy sessions: A conceptual review. *Journal of Alternative and Complementary medicine*, 17(3), 191-197.
- Gresham, H. (2014). Practice patterns of equine assisted psychotherapists. Self-published thesis. https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1014&context=hes_etds
- Hallberg, L. (2018). *The clinical practice of equine-assisted therapy: Including horses in human healthcare*. New York, NY: Routledge.
- Heller, M. (2012). *Body psychotherapy: History, concepts, and methods*. New York, NY: Oxford University Press.
- Heller, L. & LaPierre, A. (2012). *Healing developmental trauma: How early trauma affects self-regulation, self-image, and the capacity for relationship*. Berkeley, CA: North Atlantic Books.
- Hull, A. M., & Corrigan, F. M. (2019). The comprehensive resource model®: Overview of basic affects in adversity & effective treatment for complex reactions to trauma. *Counselling and Psychotherapy Research*, 19(2), 130-137.
- Irwin, C. (2013). *Horses don't lie: What horses teach us about our natural capacity for awareness, confidence, courage, and trust*. Cambridge, MA: Da Capo Press.

- Jenkins, S. (2019). Increasing tolerance for calm in clients with complex trauma and dissociation. In K. Sudekum Trotter & J.M. Baggerly (Eds.) *Equine-assisted mental health for healing trauma* (pp. 44-53).
- Kirby, M. (2016). *An introduction to equine assisted psychotherapy: Principles, theory, and practice of the equine psychotherapy institute model*. Bloomington, IN: Balboa Press.
- Kohanov, L. (2013). *The power of the herd: A nonpredatory approach to social intelligence, leadership, and innovation*. Novato, CA: New World Library.
- Levine, P.A. (1998). *Waking the tiger: Healing trauma*. Berkeley, CA: North Atlantic Books.
- Levine, P.A. (2008). *Healing trauma: A pioneering program for restoring the wisdom of your body*. Boulder, CO: Sounds True.
- Levine, P.A. (2010). *In an unspoken voice: How the body releases trauma and restores goodness*. Berkeley, CA: North Atlantic Books.
- Main, M., & Solomon, J. (1986). "Discovery of a new, insecure-disorganized/disoriented attachment pattern". In *Affective development in infancy*, edited by M. Yogman and T.B. Brazelton, 95-124. Norwood, NJ: Ablex.
- Marshall, D. & Pelletier, E. (2013). *Reflection of the horse: The generation farms approach: Workshop manual*. Nanaimo, B.C.: Author.
- Marzillier, J. (2014). *The trauma therapies*. New York, NY: Oxford University Press.
- McCormick, A., & McCormick, M. (1997). *Horses sense and the human heart: What horses can teach us about trust, bonding, creativity and spirituality*. Deerfield Beach, FL: Health Communications, Inc.

- Meinersmann, K., Bradberry, J., & Robert, F. (2008). Equine-facilitated psychotherapy with adult female survivors of abuse. *Journal of Psychosocial Nursing and Mental Health Services, 46*(12), 36-42.
- Mueller, M. & McCullough, L. (2017). Effects of equine-facilitated psychotherapy on post-traumatic stress symptoms in youth. *Journal of Child and Family Studies, 26*, 1164-1172.
- Naste, T. M., Price, M., Karol, J., . . . Spinazzola, J. (2018). Equine facilitated therapy for complex trauma (EFT-CT). *Journal of Child & Adolescent Trauma, 11*(3), 289-303.
- Notgrass, C., Pettinelli, J. (2015). Equine assisted psychotherapy: The equine assisted growth and learning association's model overview of equine-based modalities. *Journal of Experiential Education, 38*(2), 162-174.
- Ogden, P., Minton, K., & Pain, C. (2006). *Trauma and the body: A sensorimotor approach to psychotherapy*. New York, NY: W.W. Norton & Co.
- Ogden, P., & Fisher, J. (2015). *Sensorimotor psychotherapy: Interventions for trauma and attachment*. New York, NY: W.W. Norton & Co.
- Pelcovitz, D., van der Kolk, B., Roth, S. *et al.* Development of a Criteria Set and a Structured Interview for Disorders of Extreme Stress (SIDES). *J Trauma Stress 10*, 3–16 (1997).
<https://doi.org/10.1023/A:1024800212070>
- Perry, B. (2006). Applying principles of neurodevelopment to clinical work with maltreated and traumatized children: The neurosequential model of therapeutics. In N. B. Webb (Ed.), *Social Work Practice with Children and Families. Working with traumatized youth in child welfare* (p. 27–52). Guilford Press.
- Pike, K. (2009). *Hope...from the heart of horses: How horses teach us about presence, strength, and awareness*. New York, NY: Skyhorse Publishing.

- Porges, S. (1995). Orienting in a defensive world: Mammalian modifications of our evolutionary heritage. A Polyvagal Theory. *Psychophysiology*, 32(4), 301-318.
- Porges, S. (2011). *Norton Series on Interpersonal Neurobiology. The polyvagal theory: Neurophysiological foundations of emotions, attachment, communication, and self-regulation*. New York, NY: W.W. Norton & Co.
- Rashid, M. (2005). *Horsemanship through life*. Boulder, CO: Spring Creek Press.
- Rothschild, B. (2000). *The body remembers: The psychophysiology of trauma and trauma treatment*. New York, NY: W.W. Norton & Co.
- Rosenberg, S. (2017). *Accessing the healing power of the vagus nerve: Self-help exercises for anxiety, depression, trauma, and autism*. Berkeley, CA: North Atlantic Books.
- Rothschild, B. (2003). *The body remembers casebook: Unifying methods and models in the treatment of trauma and PTSD*. New York, NY: W.W. Norton & Co.
- Schlote, S. (2019). Integrating somatic experiencing and attachment into equine-assisted trauma recovery. In K. Sudekum Trotter & J.M. Baggerly (Eds.) *Equine-assisted mental health for healing trauma* (pp. 3-18).
- Schore, A. (2012). *The science of the art of psychotherapy*. New York, NY: Norton & Co.
- Schmelzer, G. (2018). *Journey through trauma: A trail guide to the 5-phase cycle of healing repeated trauma*. New York, NY: Random House.
- Schwartz, A. (2016). *The complex PTSD workbook: A mind-body approach to regaining emotional control & becoming whole*. Berkeley, CA: Althea Press.
- Schwartz, A. (2020). *The post-traumatic growth guidebook: Practical mind-body tools to heal trauma, foster resilience and awaken your potential*. Eau Claire, WI: PESI Publishing.

- Selby, A., & Smith-Osborne, A. (2013). A systematic review of effectiveness of complementary and adjunct therapies and interventions involving equines. *Health Psychology, 32*(4), 418-432.
- Selhub, E., & Logan, A. (2012). *Your brain on nature: The science of nature's influence on your health, happiness, and vitality*. Toronto, ON: HarperCollins.
- Shambo, L. (2013). *The listening heart: The limbic path beyond office therapy. A manual for the HEAL model of equine-facilitated psychotherapy and learning*. Chehalis, WA: HEAL.
- Siegel, D. (1999). *The developing mind: Toward a neurobiology of interpersonal experience*. New York, NY: Guilford Press.
- Siegel, D. (2010). *The mindful therapist: A clinician's guide to mindfulness and neural integration*. New York, NY: W.W. Norton & Company.
- Stewart, L. (April 5, 2017). *What is Your Pet Telling You?* Retrieved from: www.youtube.com/watch?v=oTVICnenYeE
- Sweeton, J. (2019). *Trauma treatment toolbox: 165 brain-changing tips, tools & handouts to move therapy forward*. Eau Claire, WI: PESI Publishing.
- Trotter, K. (Ed.). (2012). *Harnessing the power of equine assisted counselling: Adding animal assisted therapy to your practice*. New York, NY: Routledge.
- van der Kolk, B. (2005). Developmental trauma disorder: Toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals, 35*(5), 401-408.
- van der Kolk, B. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma*. New York, NY: Penguin Books.
- van der Kolk, B., McFarlane, A., & van der Hart, O. (1996). A general approach to treatment of posttraumatic stress disorder. In B.A. van der Kolk, A.C. McFarlane, & L. Weisaeth

- (Eds.), *Traumatic stress: The effects of overwhelming stress on mind, body, and society* (p. 417-440). New York, NY: Guilford Press.
- Wharton, T., Whitworth, J., Macauley, E., & Malone, M. (2019). Pilot testing a manualized equine-facilitated cognitive processing therapy (EF-CPT) intervention for PTSD in veterans. *Psychiatric Rehabilitation Journal*, 42(3), 268-276.
- Williams, P. (2019) Working with relational trauma: Limbic restructuring through equine-facilitated psychotherapy. In K. Sudekum Trotter & J.M. Baggerly (Eds.) *Equine-assisted mental health for healing trauma* (pp. 69-83).
- Yetz, J.P. (2011). Equine guided psychotherapy program description. Retrieved from <http://www.yetzmdonline.com/>.
- Young, C. (2006). One hundred and fifty years on: The history, significance and scope of body psychotherapy today. *Body, Movement and Dance in Psychotherapy*, 1(1), 17-28.
- Zaleski, K., Johnson, D., & Klein, J. (2016). Grounding Judith Herman's trauma theory within interpersonal neuroscience and evidence-based practice modalities for trauma treatment. *Smith College Studies in Social Work*, 86(4), 377-393.